(14) AMRL-TR-75-30-Vol-86
Volume 86



(9) Technical rept.

(6)

# USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK

## Volume 86

## C-130E Aircraft, Near and Far-Field Noise

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(11) FEB 1977

(12) 143 p.

(16) 7231

(17) 04



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FOR THE COMMANDER

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Director
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Aerospace Medical Research Laboratory

AIR FORCE/56780/3 January 1977 — 500

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

| REPORT DOCUMENTATION PAGE | | READ INSTRUCTIONS BEFORE COMPLETING FORM |
|---|---|---|
| 1. REPORT NUMBER<br>AMRL-TR-75-50, Vol. 86 | 2. GOVT ACCESSION NO. | 3. RECIPIENT'S CATALOG NUMBER |
| 4. TITLE (and Subtitle)<br>USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK: C-130E Aircraft, Near and Far-Field Noise | | 5. TYPE OF REPORT & PERIOD COVERED<br>Volume 86 of a series<br>6. PERFORMING ORG. REPORT NUMBER |
| 7. AUTHOR(s)<br>Robert G. Powell<br>Col Justus F. Rose | | 8. CONTRACT OR GRANT NUMBER(s) |
| 9. PERFORMING ORGANIZATION NAME AND ADDRESS<br>Aerospace Medical Research Laboratory<br>Aerospace Medical Division, Air Force Systems Command, Wright-Patterson AFB, OH 45433 | | 10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS<br>62202F 7231-04-33<br>7231-04-36 |
| 11. CONTROLLING OFFICE NAME AND ADDRESS<br>Same as above | | 12. REPORT DATE<br>February 1977<br>13. NUMBER OF PAGES<br>103 |
| 14. MONITORING AGENCY NAME & ADDRESS(if different from Controlling Office) | | 15. SECURITY CLASS. (of this report)<br>Unclassified<br>15a. DECLASSIFICATION/DOWNGRADING SCHEDULE |
| 16. DISTRIBUTION STATEMENT (of this Report)<br>Approved for public release; distribution unlimited | | |
| 17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report) | | |
| 18. SUPPLEMENTARY NOTES | | |
| 19. KEY WORDS (Continue on reverse side if necessary and identify by block number)<br>Noise<br>Noise Environments<br>Bioenvironmental Noise<br>Aircraft<br>C-130E Aircraft | | |
| 20. ABSTRACT (Continue on reverse side if necessary and identify by block number)<br>The USAF C-130E is a long range tactical airlift aircraft powered by four T56-A-7 turboprop engines. This report provides measured and extrapolated data defining the bioacoustic environments produced by this aircraft operating on a concrete runup pad for four engine power configurations. Near-field data are reported for 4 locations in a wide variety of physical and psychoacoustic measures: overall and band sound pressure levels, C-weighted and A-weighted sound levels, preferred speech interference level, perceived noise level, and | | |



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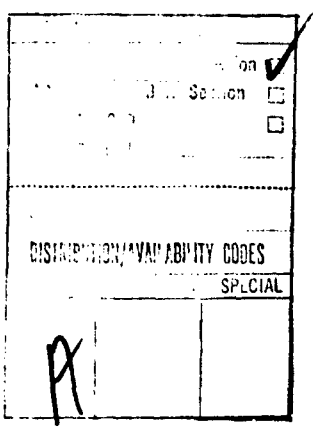
limiting times for total daily exposure of personnel with and without standard Air Force ear protectors. Far-field data measured at 19 locations are normalized to standard meteorological conditions and extrapolated from 75-8000 meters to derive sets of equal-value contours for these same seven acoustic measures as functions of angle and distance from the source. Refer to Volume 1 of this handbook, "USAF Bioenvironmental Noise Data Handbook, Vol 1: Organization, Content and Application", AMRL-TR-75-50(1) 1975, for discussion of the objective and design of the handbook, the types of data presented, measurement procedures, instrumentation, data processing, definitions of quantities, symbols, equations, applications, limitations, etc.

## PREFACE

This report was prepared by the Biodynamic Environment Branch, Aerospace Medical Research Laboratory, under Project Task 723104, Measurement and Prediction of Noise Environments of Air Force Operations.

The author gratefully acknowledges Mr. John Cole for his assistance in preparing this report, Mr. Robert England for his assistance in acquiring the raw data, Mr. Keith Kettler, Mr. Henry Mohlman and Mr. David Eilerman of the University of Dayton for assistance in the mechanics of data processing, and Mrs. Norma Peachey and Mr. Mike Patterson for assistance in typing and preparation of the graphics.



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# INTRODUCTION

The USAF C-130E is a long range tactical airlift-type aircraft powered by four T56-A-7 turboprop engines. The aircraft was manufactured by the Lockheed Aircraft Corporation and the engines by Allison, a Division of General Motors Corporation.

This volume provides measured and extrapolated data defining bioacoustic environments produced by this aircraft during ground runup operations. Such data are essential to evaluate ear protection requirements, limiting personnel exposure times, voice communication capabilities, and annoyance problems associated with ground runups of the C-130E aircraft.

This volume is one of a series published by the Aerospace Medical Research Laboratory (AMRL) under the same report number (AMRL-TR-75-50) as a multi-volume handbook that quantifies the noise environments produced at flight/ground crew locations and in surrounding communities by operations of Air Force aircraft and ground support equipment. The far-field, community-type noise data in the handbook describe the noise produced during *ground operations* of aircraft, ground support equipment, and other ground-based equipment or facilities.

Volume 1 of this handbook discusses the objectives and design of the handbook, the types of data presented, measurement procedures, instrumentation, data processing, definitions of quantities, symbols, equations, applications, limitations, etc. Volume 2 provides a method and data for adjusting the handbook's far-field noise data, which are for standard meteorological conditions (15°C temperature, 70% rel humidity, 0.760 meters Hg barometric pressure), to derive comparable data for other meteorological conditions. *Refer to Volumes 1 and 2* (references 1 and 2) for such information because it is not repeated in other handbook volumes.

A cumulative index lists those aerospace systems contained in the handbook, and identifies the specific volumes containing each type of environmental noise data available (i.e., inflight/flight crew and passenger noise, near-field/ground crew noise, far-field/community noise). Volume numbers are assigned sequentially as individual volumes are published. This index is periodically updated as individual volumes are published and is available upon request from AMRL/BBE, Wright-Patterson AFB, OH 45433. Organizations on the distribution list for the handbook will automatically receive a copy of each updated index.

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1. Cole, John N., *USAF Bioenvironmental Noise Data Handbook Volume 1: Organization, Content and Application*, AMRL-TR-75-50 (1), Aerospace Medical Research Laboratory, Wright-Patterson Air Force Base, Ohio, 1975.

2. Cole, John N., *USAF Bioenvironmental Noise Data Handbook, Volume 2: Procedure to Evaluate Effects of Non-standard Meteorological Conditions on Far-Field Noise*, AMRL-TR-75-50 (2), AMRL, WPAFB, OH, 1975.

# NEAR-FIELD NOISE

## MEASUREMENTS

AMRL acquired near-field noise data on the C-130E aircraft during ground runup operations of its on-board gas turbine compressor, GTC, and turboprop engines. For these tests the aircraft was located on a concrete parking apron at Pope AFB with no significant reflecting surfaces in the vicinity except the ground plane. Table 1 gives the surface meteorological conditions and the five engine or GTC power conditions. The ground-crew chief selected power conditions and near-field locations generally used during routine maintenance or engine runup for preflight checks.

At each near-field location a test engineer randomly moved a hand-held microphone in and around each location, probing all areas where a crew member's head would normally be located. He recorded all the noise samples on magnetic tape. During analysis of each sample, he determined the one-third octave band root-mean-square sound pressure using a 4- or 8-second integration time to derive a power-averaged level for each location. Figure 1 shows the four near-field locations where ground crew are usually located for maintenance and/or preflight checkout operations. Estimates of noise levels at other locations are difficult in the near-field since the noise source is spatially distributed, i.e., not a point source. The noise levels at near-field locations can vary widely depending upon relative distances from each noise source (intake noise, exhaust noise, panel resonances, internal engine noise through the engine wall, etc.).

Table 1 lists the numeric/alphabetic designators used on the data pages in this report to identify the measurement locations and test conditions. For example, the designator 1/A means ground crew location 1 and test condition A.

## RESULTS

The measured data presented in Table 2 define the sound pressure levels (SPL) produced by the C-130E aircraft at the four ground crew locations. This table includes the overall, 1/3 octave band, and octave band levels. From these data one can caluclate the variety of measures given in Table 3, which are widely used to assess the effects of noise on personnel and their performance.

All near-field data are the meteorological conditions at the time of test but are valid for all typical airbase meteorology because of the short sound propagation distances involved.

TABLE 1

MEASUREMENT LOCATIONS AND TEST CONDITIONS
FOR NEAR-FIELD NOISE MEASURMENTS

C-130E Aircraft, Ground Runup, Pope AFB, 4 Mar 1971,
Tail # 640495

*Ground Crew Location*

| | |
|---|---|
| 1-4 | Engine Starting Observer |

*Aircraft Engine Operation*

| | |
|---|---|
| A | Engines Off<br>Gas Turbine Compressor, GTC, On |
| B | Engine #3 Idle, GTC On |
| C | Engines #3 and 4 Idle, GTC On |
| D | Engines #2, #3, and #4 idle, GTC On |
| E | All Engines Idle, GTC On |

*Meteorology*

| | |
|---|---|
| Temperature | 16.7 C |
| Bar Pressure | 0.763 M Hg |
| Rel Humidity | 54 % |
| Wind — Speed | 1 M/Sec (2 kt) |
| — Direction | 130 Deg |

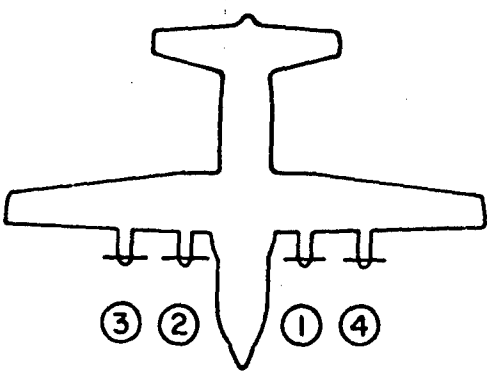



**Figure 1. Near-Field Measurement Locations on Parking Apron, Pope AFB, NC**

## FAR-FIELD NOISE

### MEASUREMENTS

AMRL acquired the near and far-field data during a 1- 2-hour test period, thus keeping similar meteorological conditions. Figure 2 shows the aircraft on a concrete parking apron and its orientation relative to 19 microphone measurement sites on a semicircle. The center of the 76 meter radius semicircle used in surveying the T56-A-7 engines was on the ground directly below the intersection of the aircraft's centerline and the plane passing through all engines' propeller planes.

Table 4 provides cockpit readouts of engine characteristics (% RPM, fuel flow, etc.) for each power setting used in the far-field tests. Also listed in this table are the surface meteorological conditions during data acquisition.

All 19 microphone measurement sites are in the acoustic far-field of the source where the sound wave-fronts spherically diverge and the noise source may be regarded as a point source.

A portable microphone/tape recorder system was used to sequentially record the noise at each far-field location. The microphone was hand-held 1.7 meters (5-1/2 feet) above the ground and pointed at the source (0° angle of incidence).

### RESULTS

Table 5 lists the overall and 1/3 octave band SPL measured at the far-field locations under meteorological conditions at the time of the test. Data in all other figures and tables are based on these levels. These data were normalized to 100 meters distance and standard meteorological conditions (15 C temperature, 70% relative humidity, 0.760 meter Hg barometric pressure) and used to derive the graphic data in Figure 3 which provides a compact summary of the far-field noise characteristics of the C-130E aircraft in a standard format.

Figure 4 and Table 6 present two basic acoustic measures, the acoustic power levels and the directivity index, respectively. The acoustic power level describes the power radiated by the source as a function of frequency. The directivity index is a standard acoustical engineering measure that describes the geometric way in which the source radiates this power as a function of both frequency and angle from source. These basic source measures are primarily of interest for acoustical engineers and noise generation/control specialists.

Estimates of the noise levels for intermediate power settings (e.g., 11,000 inch-lbs torque) and/or different number of engines operating (e.g., single engine) can be determined as explained in Volume 1 of this handbook.

Figures 5 through 11 are sets of equal noise contours describing seven different measures of noise as a function of angle and distance from the source for standard day meteorology. They are respectively, overall sound pressure level, C-weighted sound level, A-weighted sound level, perceived noise level, speech interference level, permissible exposure times for personnel and octave band sound pressure levels.

Data excessively influenced by spurious background electronic noise were eliminated from all figures and tables. No data are presented beyond the 150-degree location for the two highest power settings because of turbulent air flow behind the aircraft. Typically, the A-weighted levels for these angles are 10 to 20 dBA below the level at the 150 degree location.

Test personnel performed noise surveys during quiet periods when the background noise was minimal, e.g., early in the morning when no other aircraft or engine test stands were operating. Data eliminated because they were near the background electronic noise were generally not significant because the levels were so low.

Volume 2 of the handbook describes the influence of meteorology on far-field noise environments, and provides, if required, the factors necesasry to adjust the handbook's standard meteorological day data.

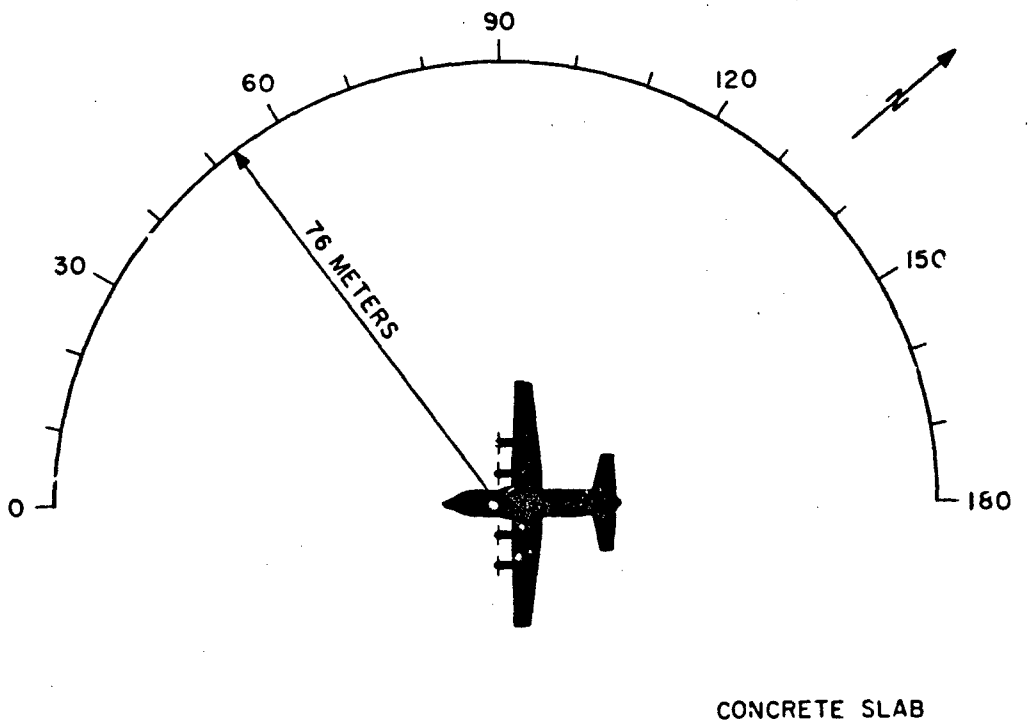



**Figure 2. Far-Field Measurement Locations on Parking Apron, Pope AFB, NC**

TABLE: 2 MEASURED SOUND PRESSURE LEVEL (DB) 1/3 OCTAVE BAND

IDENTIFICATION:
OMEGA 3.2
TEST 71-011-102
RUN 01
21 MAR 75
PAGE F1

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
GROUND CREW
NEAR FIELD NOISE LEVELS

OPERATION:

| FREQ (HZ) | LOCATION/CONDITION 1/A | 2/B | 3/C | 1/D | 4/E |
|---|---|---|---|---|---|
| 25 | 67 | 77 | 81 | 78 | 78 |
| 31.5 | 68 | 86 | 89 | 81 | 85 |
| 40 | 71 | 84 | 91 | 92 | 95 |
| 50 | 76 | 88 | 89 | 100 | 100 |
| 63 | 78 | 101 | 101 | 100 | 99 |
| 80 | 78 | 90 | 94 | 93 | 96 |
| 100 | 80 | 90 | 93 | 101 | 102 |
| 125 | 83 | 101 | 100 | 100 | 101 |
| 160 | 89 | 101 | 102 | 97 | 98 |
| 200 | 86 | 102 | 102 | 100 | 101 |
| 250 | 83 | 105 | 106 | 98 | 100 |
| 315 | 88 | 105 | 105 | 99 | 100 |
| 400 | 85 | 103 | 103 | 98 | 100 |
| 500 | 86 | 104 | 102 | 97 | 100 |
| 630 | 82 | 102 | 102 | 96 | 97 |
| 800 | 78 | 99 | 99 | 95 | 96 |
| 1000 | 83 | 99 | 99 | 95 | 96 |
| 1250 | 83 | 97 | 98 | 93 | 94 |
| 1600 | 83 | 98 | 98 | 93 | 96 |
| 2000 | 83 | 96 | 97 | 91 | 93 |
| 2500 | 86 | 96 | 96 | 90 | 92 |
| 3150 | 90 | 94 | 96 | 90 | 93 |
| 4000 | 88 | 91 | 97 | 91 | 96 |
| 5000 | 87 | 91 | 98 | 102 | 106 |
| 6300 | 89 | 96 | 98 | 100 | 102 |
| 8000 | 98 | 102 | 102 | 94 | 100 |
| 10000 | 95 | 93 | 98 | 101 | 104 |
| OVERALL | 102 | 114 | 114 | 112 | 114 |

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: 2 MEASURED SOUND PRESSURE LEVEL (DB) OCTAVE BAND

IDENTIFICATION:
OMEGA 3.2
TEST 71-001-102
RUN 01

21 MAR 75

PAGE J1

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
GROUND CREW
NEAR FIELD NOISE LEVELS

OPERATION:

LOCATION/CONDITION

| FREQ (HZ) | 1/A | 2/B | 3/C | 1/D | 4/E |
|---|---|---|---|---|---|
| 31.5 | 74 | 88 | 93 | 92 | 95 |
| 63 | 82 | 101 | 102 | 103 | 103 |
| 125 | 90 | 104 | 105 | 104 | 105 |
| 250 | 91 | 109 | 109 | 104 | 105 |
| 500 | 89 | 105 | 107 | 102 | 104 |
| 1000 | 86 | 103 | 104 | 99 | 100 |
| 2000 | 89 | 101 | 102 | 96 | 99 |
| 4000 | 93 | 97 | 102 | 103 | 107 |
| 8000 | 100 | 103 | 104 | 104 | 107 |
| OVERALL | 102 | 114 | 114 | 112 | 114 |

TABLE: MEASURES OF HUMAN NOISE EXPOSURE

3

IDENTIFICATION:
OMEGA 3.2
TEST 71-001-102
RUN 01

21 MAR 75

PAGE H1

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
GROUND CREW
NEAR FIELD NOISE LEVELS

OPERATION:

| | LOCATION/CONDITION | | | | |
|---|---|---|---|---|---|
| | 1/A | 2/B | 3/C | 1/D | 4/E |
| HAZARD/PROTECTION | | | | | |
| C-WEIGHTED OVERALL SOUND LEVEL (OASLC IN DBC) AT EAR | | | | | |
| A-WEIGHTED OVERALL SOUND LEVEL (OASLA IN DBA) AT EAR | | | | | |
| MAXIMUM PERMISSIBLE TIME (T IN MINUTES) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) | | | | | |
| NO PROTECTION | | | | | |
| OASLC | 100 | 114 | 114 | 111 | 113 |
| OASLA | 101 | 110 | 111 | 108 | 111 |
| T | 25 | 5 | 4.5 | 8 | 4.5 |
| MINIMUM QPL EAR MUFFS | | | | | |
| OASLA* | 77 | 90 | 90 | 88 | 89 |
| T | 960 | 170 | 170 | 240 | 202 |
| AMERICAN OPTICAL 1700 EAR MUFFS | | | | | |
| OASLA* | 74 | 85 | 86 | 83 | 84 |
| T | 960 | 404 | 339 | 571 | 480 |
| V-51R EAR PLUGS | | | | | |
| OASLA* | 72 | 86 | 86 | 82 | 84 |
| T | 960 | 339 | 339 | 679 | 480 |
| AMERICAN OPTICAL 1700 EAR MUFFS PLUS V-51R EAR PLUGS | | | | | |
| OASLA* | 61 | 71 | 72 | 69 | 71 |
| T | 960 | 960 | 960 | 960 | 960 |
| H-133 GROUND COMMUNICATION UNIT | | | | | |
| OASLA* | 72 | 82 | 83 | 80 | 82 |
| T | 960 | 679 | 571 | 960 | 679 |
| COMMUNICATION | | | | | |
| PREFERRED SPEECH INTERFERENCE LEVEL (PSIL IN DB) | | | | | |
| PSIL | 88 | 104 | 104 | 99 | 101 |
| ANNOYANCE | | | | | |
| PERCEIVED NOISE LEVEL, TONE CORRECTED (PNLT IN PNDB) | | | | | |
| TONE CORRECTION (C IN DB) | | | | | |
| PNLT | 116 | 125 | 125 | 126 | 129 |
| C | 1 | 1 | 1 | 2 | 2 |

* BASED ON CALCULATED SPL SPECTRUM UNDER PROTECTIVE DEVICE.

TABLE 4

TEST CONDITIONS
FOR FAR-FIELD NOISE MEASUREMENTS

C-130E Aircraft, Ground Runup,
Pope AFB Tail #640495

*Aircraft Engine Operation*

| | |
|---|---|
| Idle, Low Speed | All engines<br>800 in-lbs Torque<br>73 % RPM<br>625 C, Turbine Inlet Temperature<br>650 LBS/HR, Fuel Flow |
| Idle, Normal | All Engines<br>1400 in-lbs Torque<br>97.5 % RPM<br>560 C, TIT<br>780 LBS/HR, FF |
| Runup Power | All Engines<br>9600 in-lbs Torque<br>100 % RPM<br>775 C, TIT<br>1400 LBS/HR, FF |
| Military Power | All Engines<br>16,800 in-lbs Torque<br>100 % RPM<br>970 C, TIT<br>2000 LBS/HR, FF |

*Meteorology*

| | |
|---|---|
| Temperature | 16.7 C |
| Bar Pressure | 0.763 M Hg |
| Rel Humidity | 54 % |
| Wind — Speed | 1 M/Sec (2 Kt) |
| — Direction | 130 Deg |

TABLE: 5

MEASURED SOUND PRESSURE LEVEL (DB)
1/3 OCTAVE BAND
DISTANCE = 75 METERS

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 01
17 APR 75
PAGE 2

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER, LOW SPEED
800 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 17 C
BAR PRESS = .763 M HG
REL HUMID = 54 %

| FREQ (HZ) | ANGLE (DEGREES) 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | 65 | 65 | 65 | 65 | 64 | 65 | 65 | 64 | 64 | 64 | 63 | 64 | 66 | 66 | 66 | 65 | 70 | 72 | 70 |
| 31.5 | 68 | 69 | 69 | 67 | 68 | 68 | 67 | 66 | 65 | 66 | 66 | 67 | 67 | 69 | 70 | 68 | 69 | 69 | 70 |
| 40 | 81 | 82 | 81 | 80 | 79 | 78 | 75 | 73 | 72 | 73 | 73 | 75 | 77 | 76 | 77 | 76 | 74 | 74 | 75 |
| 50 | 89 | 89 | 88 | 88 | 86 | 86 | 85 | 85 | 84 | 88 | 86 | 82 | 86 | 84 | 85 | 85 | 80 | 81 | 82 |
| 63 | 77 | 78 | 77 | 75 | 74 | 74 | 73 | 74 | 73 | 75 | 74 | 76 | 76 | 77 | 77 | 76 | 72 | 72 | 73 |
| 80 | 85 | 86 | 85 | 84 | 82 | 81 | 78 | 79 | 78 | 79 | 78 | 79 | 81 | 82 | 81 | 80 | 76 | 75 | 74 |
| 100 | 93 | 91 | 90 | 90 | 92 | 89 | 91 | 93 | 93 | 96 | 95 | 92 | 95 | 95 | 93 | 88 | 84 | 83 | 84 |
| 125 | 92 | 90 | 89 | 89 | 90 | 88 | 90 | 91 | 91 | 95 | 94 | 91 | 93 | 94 | 91 | 87 | 82 | 82 | 83 |
| 160 | 90 | 89 | 88 | 89 | 86 | 86 | 87 | 85 | 83 | 85 | 86 | 87 | 88 | 89 | 89 | 86 | 83 | 80 | 79 |
| 200 | 89 | 88 | 88 | 89 | 86 | 86 | 86 | 84 | 83 | 84 | 84 | 85 | 85 | 87 | 87 | 86 | 82 | 79 | 78 |
| 250 | 87 | 87 | 86 | 85 | 85 | 83 | 83 | 81 | 80 | 81 | 84 | 83 | 85 | 84 | 85 | 86 | 81 | 78 | 78 |
| 315 | 89 | 90 | 90 | 85 | 88 | 86 | 84 | 84 | 81 | 83 | 85 | 85 | 87 | 87 | 89 | 88 | 84 | 81 | 81 |
| 400 | 89 | 87 | 88 | 87 | 85 | 85 | 85 | 84 | 83 | 83 | 82 | 85 | 85 | 87 | 86 | 85 | 81 | 79 | 77 |
| 500 | 85 | 84 | 82 | 84 | 81 | 80 | 82 | 78 | 79 | 79 | 78 | 81 | 82 | 83 | 81 | 82 | 76 | 76 | 75 |
| 630 | 84 | 84 | 83 | 79 | 81 | 80 | 79 | 80 | 79 | 80 | 81 | 82 | 84 | 85 | 85 | 82 | 77 | 78 | 77 |
| 800 | 82 | 80 | 79 | 81 | 78 | 78 | 80 | 78 | 78 | 77 | 74 | 78 | 79 | 80 | 79 | 77 | 72 | 72 | 72 |
| 1000 | 79 | 80 | 79 | 78 | 78 | 77 | 77 | 77 | 76 | 78 | 76 | 77 | 77 | 79 | 78 | 75 | 73 | 72 | 70 |
| 1250 | 78 | 78 | 78 | 79 | 77 | 77 | 77 | 75 | 74 | 77 | 75 | 76 | 75 | 76 | 76 | 73 | 71 | 68 | 67 |
| 1600 | 79 | 80 | 80 | 80 | 78 | 78 | 78 | 77 | 77 | 78 | 78 | 79 | 78 | 78 | 77 | 74 | 72 | 68 | 68 |
| 2000 | 78 | 78 | 78 | 77 | 77 | 76 | 76 | 75 | 75 | 76 | 76 | 78 | 79 | 78 | 76 | 72 | 70 | 67 | 66 |
| 2500 | 78 | 77 | 77 | 75 | 74 | 75 | 74 | 74 | 73 | 75 | 75 | 77 | 77 | 77 | 75 | 72 | 68 | 66 | 65 |
| 3150 | 79 | 78 | 77 | 76 | 74 | 75 | 74 | 74 | 73 | 75 | 75 | 76 | 77 | 78 | 75 | 72 | 70 | 67 | 65 |
| 4000 | 78 | 77 | 75 | 74 | 73 | 72 | 73 | 71 | 71 | 73 | 74 | 75 | 75 | 76 | 74 | 71 | 68 | 66 | 64 |
| 5000 | 88 | 87 | 89 | 87 | 86 | 85 | 81 | 77 | 77 | 77 | 77 | 78 | 77 | 79 | 77 | 73 | 69 | 68 | 66 |
| 6300 | 85 | 84 | 84 | 82 | 82 | 80 | 79 | 77 | 77 | 79 | 79 | 80 | 80 | 82 | 81 | 77 | 74 | 72 | 71 |
| 8000 | 75 | 75 | 74 | 72 | 71 | 70 | 70 | 67 | 68 | 70 | 70 | 71 | 72 | 74 | 71 | 67 | 63 | 62 | 61 |
| 10000 | 76 | 76 | 75 | 73 | 72 | 71 | 68 | 64 | 64 | 67 | 67 | 69 | 68 | 70 | 67 | 63 | 59 | 57 | 56 |
| OVERALL | 100 | 100 | 99 | 98 | 98 | 97 | 97 | 97 | 97 | 99 | 99 | 98 | 99 | 100 | 99 | 96 | 92 | 91 | 91 |

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE 5 MEASURED SOUND PRESSURE LEVEL (DB)
1/3 OCTAVE BAND
DISTANCE = 75 METERS

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER, NORMAL SPEED
1400 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 17 C
BAR PRESS = .763 M HG
REL HUMID = 54 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 02
17 APR 75
PAGE 2

| FREQ (HZ) | ANGLE (DEGREES) 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | 67 | 68 | 69 | 67 | 66 | 66 | 67 | 67 | 65 | 66 | 67 | 68 | 69 | 70 | 72 | 71 | 76 | 87 | 98 |
| 31.5 | 70 | 70 | 71 | 72 | 73 | 71 | 68 | 68 | 68 | 69 | 69 | 70 | 73 | 73 | 74 | 73 | 74 | 86 | 88 |
| 40 | 73 | 73 | 73 | 73 | 72 | 70 | 70 | 71 | 70 | 71 | 73 | 73 | 74 | 75 | 76 | 75 | 75 | 84 | 86 |
| 50 | 79 | 79 | 78 | 78 | 77 | 76 | 77 | 76 | 76 | 77 | 77 | 77 | 79 | 79 | 79 | 78 | 77 | 81 | 83 |
| 63 | 90 | 93 | 91 | 93 | 92 | 93 | 96 | 96 | 98 | 98 | 96 | 94 | 94 | 94 | 93 | 88 | 86 | 82 | 84 |
| 80 | 83 | 83 | 83 | 82 | 81 | 80 | 83 | 83 | 84 | 84 | 83 | 83 | 84 | 85 | 87 | 83 | 80 | 78 | 79 |
| 100 | 83 | 84 | 83 | 82 | 82 | 81 | 82 | 81 | 80 | 81 | 83 | 85 | 88 | 87 | 88 | 84 | 79 | 77 | 78 |
| 125 | 97 | 98 | 97 | 96 | 94 | 94 | 93 | 92 | 92 | 91 | 89 | 90 | 93 | 94 | 96 | 91 | 85 | 82 | 83 |
| 160 | 94 | 93 | 93 | 93 | 90 | 91 | 93 | 93 | 95 | 97 | 98 | 96 | 101 | 103 | 102 | 95 | 88 | 86 | 87 |
| 200 | 98 | 97 | 97 | 97 | 96 | 92 | 92 | 89 | 87 | 86 | 87 | 89 | 92 | 94 | 96 | 93 | 86 | 83 | 84 |
| 250 | 96 | 97 | 98 | 96 | 94 | 94 | 92 | 90 | 88 | 87 | 86 | 88 | 92 | 89 | 91 | 92 | 86 | 86 | 85 |
| 315 | 100 | 100 | 100 | 99 | 97 | 97 | 95 | 94 | 89 | 89 | 90 | 93 | 96 | 95 | 96 | 96 | 89 | 87 | 86 |
| 400 | 98 | 97 | 97 | 96 | 94 | 91 | 92 | 90 | 86 | 87 | 89 | 89 | 92 | 95 | 95 | 91 | 86 | 83 | 84 |
| 500 | 93 | 94 | 93 | 92 | 89 | 89 | 88 | 86 | 86 | 84 | 85 | 86 | 88 | 88 | 90 | 89 | 84 | 83 | 81 |
| 630 | 95 | 95 | 94 | 93 | 90 | 88 | 89 | 88 | 84 | 86 | 86 | 88 | 89 | 90 | 89 | 89 | 84 | 80 | 81 |
| 800 | 90 | 90 | 90 | 88 | 87 | 85 | 84 | 85 | 83 | 84 | 84 | 85 | 85 | 86 | 86 | 84 | 81 | 78 | 78 |
| 1000 | 90 | 89 | 89 | 88 | 87 | 84 | 85 | 85 | 83 | 84 | 85 | 85 | 85 | 86 | 85 | 83 | 80 | 76 | 76 |
| 1250 | 87 | 87 | 86 | 85 | 85 | 84 | 85 | 84 | 82 | 82 | 82 | 81 | 83 | 82 | 83 | 81 | 77 | 73 | 75 |
| 1600 | 88 | 88 | 86 | 85 | 87 | 86 | 86 | 84 | 83 | 83 | 83 | 83 | 85 | 83 | 84 | 80 | 75 | 74 | 73 |
| 2000 | 87 | 87 | 85 | 84 | 85 | 84 | 84 | 84 | 81 | 81 | 82 | 82 | 84 | 82 | 82 | 78 | 72 | 72 | 70 |
| 2500 | 87 | 86 | 85 | 82 | 83 | 81 | 81 | 81 | 80 | 80 | 81 | 81 | 82 | 82 | 80 | 76 | 70 | 71 | 68 |
| 3150 | 84 | 82 | 81 | 81 | 81 | 81 | 81 | 80 | 80 | 80 | 81 | 81 | 82 | 81 | 80 | 76 | 69 | 70 | 68 |
| 4000 | 81 | 80 | 79 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 79 | 79 | 80 | 79 | 78 | 74 | 67 | 68 | 66 |
| 5000 | 80 | 79 | 78 | 77 | 77 | 76 | 75 | 77 | 76 | 77 | 78 | 78 | 79 | 78 | 78 | 72 | 65 | 66 | 64 |
| 6300 | 83 | 82 | 81 | 79 | 77 | 77 | 76 | 76 | 75 | 76 | 78 | 78 | 78 | 77 | 76 | 71 | 64 | 65 | 63 |
| 8000 | 87 | 87 | 85 | 84 | 82 | 80 | 79 | 79 | 76 | 77 | 78 | 78 | 79 | 78 | 78 | 71 | 65 | 66 | 65 |
| 10000 | 73 | 73 | 72 | 70 | 70 | 69 | 70 | 70 | 70 | 72 | 73 | 73 | 74 | 73 | 73 | 66 | 60 | 61 | 61 |
| OVERALL | 107 | 107 | 106 | 105 | 104 | 103 | 103 | 102 | 102 | 102 | 102 | 102 | 105 | 106 | 106 | 102 | 96 | 96 | 97 |

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: 5

MEASURED SOUND PRESSURE LEVEL (DB)
1/3 OCTAVE BAND
DISTANCE = 75 METERS

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 03
17 APR 75
PAGE 2

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
RUNUP POWER
9600 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 17 C
BAR PRESS = .763 M HG
REL HUMID = 54 %

| FREQ (HZ) | ANGLE (DEGREES) 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | 73 | 72 | 71 | 70 | 73 | 72 | 73 | 73 | 75 | 74 | 75 | 76 | 76 | 76 | 76 | 74 | | | |
| 31.5 | 77 | 77 | 76 | 78 | 76 | 78 | 75 | 76 | 79 | 80 | 81 | 82 | 80 | 81 | 81 | 82 | | | |
| 40 | 75 | 74 | 75 | 74 | 75 | 75 | 75 | 76 | 78 | 79 | 79 | 79 | 79 | 79 | 80 | 78 | | | |
| 50 | 77 | 77 | 78 | 76 | 77 | 77 | 79 | 81 | 84 | 85 | 85 | 85 | 84 | 81 | 81 | 79 | | | |
| 63 | 94 | 91 | 97 | 93 | 96 | 97 | 101 | 103 | 110 | 110 | 111 | 111 | 108 | 103 | 100 | 94 | | | |
| 80 | 84 | 82 | 86 | 83 | 85 | 86 | 89 | 92 | 98 | 98 | 99 | 99 | 96 | 92 | 88 | 84 | | | |
| 100 | 82 | 81 | 80 | 78 | 80 | 80 | 81 | 81 | 81 | 82 | 83 | 84 | 85 | 85 | 82 | 78 | | | |
| 125 | 88 | 87 | 84 | 83 | 85 | 90 | 88 | 93 | 96 | 96 | 94 | 91 | 91 | 91 | 86 | 79 | | | |
| 160 | 86 | 85 | 82 | 81 | 82 | 84 | 84 | 86 | 89 | 90 | 88 | 89 | 88 | 88 | 86 | 76 | | | |
| 200 | 85 | 85 | 82 | 84 | 84 | 89 | 86 | 85 | 86 | 87 | 86 | 88 | 85 | 86 | 85 | 74 | | | |
| 250 | 87 | 84 | 84 | 86 | 84 | 88 | 86 | 85 | 88 | 89 | 86 | 87 | 87 | 87 | 86 | 74 | | | |
| 315 | 90 | 87 | 86 | 87 | 86 | 93 | 90 | 86 | 89 | 90 | 88 | 88 | 89 | 89 | 87 | 78 | | | |
| 400 | 86 | 87 | 86 | 84 | 85 | 91 | 86 | 84 | 88 | 88 | 85 | 88 | 88 | 87 | 83 | 77 | | | |
| 500 | 85 | 85 | 87 | 86 | 86 | 93 | 86 | 85 | 88 | 88 | 86 | 87 | 87 | 86 | 84 | 78 | | | |
| 630 | 87 | 87 | 86 | 86 | 85 | 90 | 85 | 83 | 87 | 87 | 84 | 85 | 85 | 84 | 81 | 77 | | | |
| 800 | 84 | 85 | 84 | 84 | 84 | 89 | 84 | 82 | 86 | 87 | 84 | 83 | 84 | 83 | 81 | 77 | | | |
| 1000 | 86 | 85 | 85 | 84 | 83 | 87 | 83 | 82 | 84 | 86 | 82 | 82 | 82 | 81 | 80 | 75 | | | |
| 1250 | 83 | 83 | 83 | 82 | 82 | 86 | 82 | 82 | 84 | 85 | 81 | 81 | 81 | 81 | 78 | 74 | | | |
| 1600 | 84 | 84 | 84 | 83 | 84 | 87 | 85 | 85 | 85 | 84 | 82 | 83 | 82 | 82 | 80 | 74 | | | |
| 2000 | 84 | 84 | 83 | 83 | 84 | 86 | 84 | 83 | 84 | 83 | 81 | 82 | 82 | 81 | 79 | 72 | | | |
| 2500 | 85 | 85 | 85 | 83 | 84 | 84 | 83 | 83 | 83 | 81 | 81 | 80 | 81 | 79 | 78 | 71 | | | |
| 3150 | 85 | 84 | 85 | 83 | 84 | 84 | 84 | 84 | 84 | 81 | 80 | 80 | 80 | 80 | 78 | 72 | | | |
| 4000 | 82 | 83 | 83 | 82 | 83 | 83 | 83 | 82 | 82 | 80 | 78 | 79 | 78 | 77 | 75 | 69 | | | |
| 5000 | 82 | 82 | 83 | 81 | 82 | 83 | 82 | 82 | 81 | 79 | 78 | 78 | 77 | 75 | 75 | 68 | | | |
| 6300 | 82 | 83 | 84 | 81 | 82 | 82 | 81 | 80 | 80 | 77 | 76 | 76 | 76 | 74 | 72 | 66 | | | |
| 8000 | 85 | 87 | 87 | 84 | 83 | 81 | 81 | 79 | 79 | 76 | 75 | 75 | 75 | 73 | 71 | 64 | | | |
| 10000 | 75 | 76 | 77 | 75 | 76 | 76 | 76 | 75 | 75 | 73 | 73 | 72 | 73 | 72 | 70 | 63 | | | |
| OVERALL | 100 | 99 | 100 | 98 | 100 | 103 | 103 | 105 | 110 | 110 | 111 | 112 | 108 | 105 | 101 | 95 | | | |

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE 5: MEASURED SOUND PRESSURE LEVEL (DB)
1/3 OCTAVE BAND
DISTANCE = 75 METERS

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
16800 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 17 C
BAR PRESS = .763 M HG
REL HUMID = 54 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 04
17 APR 75
PAGE 2

| FREQ (HZ) | ANGLE (DEGREES) 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | 80 | 79 | 79 | 79 | 80 | 81 | 83 | 83 | 83 | 83 | 83 | 82 | 84 | 83 | 83 | 90 | | | |
| 31.5 | 80 | 80 | 81 | 82 | 83 | 82 | 84 | 84 | 85 | 86 | 84 | 85 | 86 | 85 | 86 | 90 | | | |
| 40 | 81 | 82 | 81 | 82 | 82 | 82 | 83 | 83 | 84 | 84 | 85 | 85 | 85 | 84 | 84 | 88 | | | |
| 50 | 83 | 84 | 84 | 83 | 84 | 84 | 86 | 87 | 89 | 88 | 92 | 89 | 87 | 87 | 86 | 86 | | | |
| 63 | 93 | 99 | 100 | 97 | 105 | 105 | 109 | 112 | 115 | 112 | 118 | 115 | 108 | 107 | 102 | 94 | | | |
| 80 | 87 | 90 | 90 | 80 | 93 | 94 | 97 | 101 | 103 | 100 | 106 | 104 | 96 | 95 | 92 | 85 | | | |
| 100 | 89 | 89 | 80 | 87 | 87 | 86 | 87 | 87 | 87 | 87 | 89 | 89 | 90 | 89 | 86 | 81 | | | |
| 125 | 94 | 95 | 94 | 93 | 92 | 94 | 100 | 103 | 107 | 106 | 101 | 97 | 98 | 96 | 89 | 82 | | | |
| 160 | 93 | 93 | 92 | 91 | 91 | 90 | 93 | 95 | 98 | 97 | 95 | 93 | 93 | 93 | 90 | 79 | | | |
| 200 | 92 | 95 | 92 | 95 | 94 | 92 | 91 | 92 | 91 | 92 | 92 | 91 | 91 | 91 | 88 | 78 | | | |
| 250 | 94 | 96 | 97 | 98 | 95 | 94 | 94 | 93 | 92 | 92 | 93 | 92 | 93 | 92 | 87 | 76 | | | |
| 315 | 95 | 97 | 97 | 99 | 96 | 98 | 95 | 94 | 94 | 94 | 95 | 95 | 94 | 94 | 90 | 79 | | | |
| 400 | 92 | 94 | 95 | 93 | 93 | 94 | 92 | 92 | 91 | 90 | 91 | 92 | 92 | 90 | 88 | 78 | | | |
| 500 | 92 | 94 | 94 | 94 | 93 | 95 | 94 | 94 | 92 | 92 | 92 | 92 | 91 | 90 | 86 | 77 | | | |
| 630 | 92 | 93 | 92 | 92 | 92 | 93 | 92 | 91 | 91 | 89 | 90 | 90 | 90 | 88 | 86 | 77 | | | |
| 800 | 91 | 93 | 91 | 91 | 91 | 91 | 91 | 90 | 90 | 89 | 89 | 89 | 88 | 87 | 85 | 77 | | | |
| 1000 | 91 | 92 | 90 | 90 | 90 | 91 | 92 | 92 | 90 | 89 | 89 | 88 | 88 | 86 | 85 | 78 | | | |
| 1250 | 89 | 91 | 90 | 91 | 91 | 92 | 93 | 93 | 91 | 89 | 89 | 87 | 88 | 85 | 84 | 75 | | | |
| 1600 | 92 | 93 | 94 | 94 | 94 | 94 | 97 | 95 | 94 | 90 | 89 | 88 | 89 | 86 | 84 | 75 | | | |
| 2000 | 92 | 93 | 95 | 94 | 94 | 94 | 95 | 94 | 93 | 88 | 87 | 87 | 87 | 85 | 83 | 73 | | | |
| 2500 | 92 | 92 | 92 | 91 | 92 | 92 | 92 | 91 | 91 | 87 | 87 | 86 | 86 | 84 | 82 | 72 | | | |
| 3150 | 92 | 93 | 93 | 92 | 92 | 92 | 93 | 91 | 90 | 88 | 86 | 85 | 86 | 84 | 81 | 72 | | | |
| 4000 | 89 | 91 | 91 | 89 | 90 | 89 | 90 | 88 | 88 | 85 | 84 | 83 | 84 | 83 | 79 | 69 | | | |
| 5000 | 88 | 89 | 89 | 88 | 88 | 87 | 89 | 87 | 87 | 83 | 83 | 82 | 82 | 81 | 77 | 69 | | | |
| 6300 | 87 | 87 | 87 | 85 | 86 | 85 | 87 | 85 | 85 | 81 | 81 | 80 | 80 | 79 | 75 | 65 | | | |
| 8000 | 86 | 87 | 87 | 84 | 84 | 83 | 84 | 82 | 82 | 79 | 78 | 77 | 77 | 76 | 72 | 62 | | | |
| 10000 | 79 | 80 | 80 | 78 | 78 | 78 | 79 | 78 | 78 | 75 | 75 | 74 | 74 | 73 | 68 | 59 | | | |
| OVERALL | 105 | 107 | 107 | 107 | 108 | 108 | 111 | 114 | 116 | 113 | 118 | 116 | 109 | 108 | 104 | 98 | | | |

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

FIGURE: NORMALIZED FARFIELD NOISE LEVELS

3 DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER, LOW SPEED
800 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 01
17 APR 75
PAGE 6

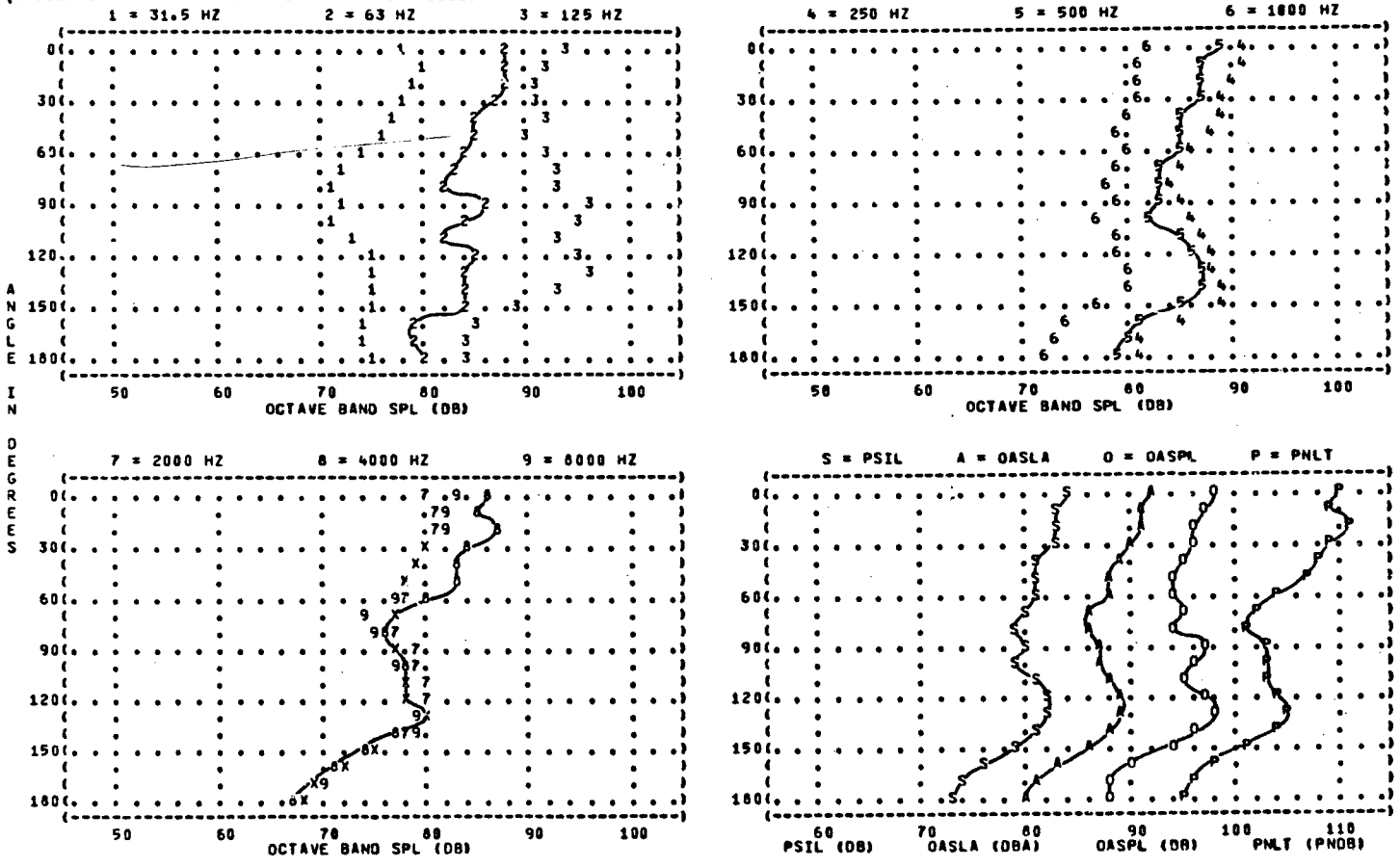


FIGURE 3 NORMALIZED FARFIELD NOISE LEVELS

DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER, NORMAL SPEED
1400 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 02
17 APR 75
PAGE 6

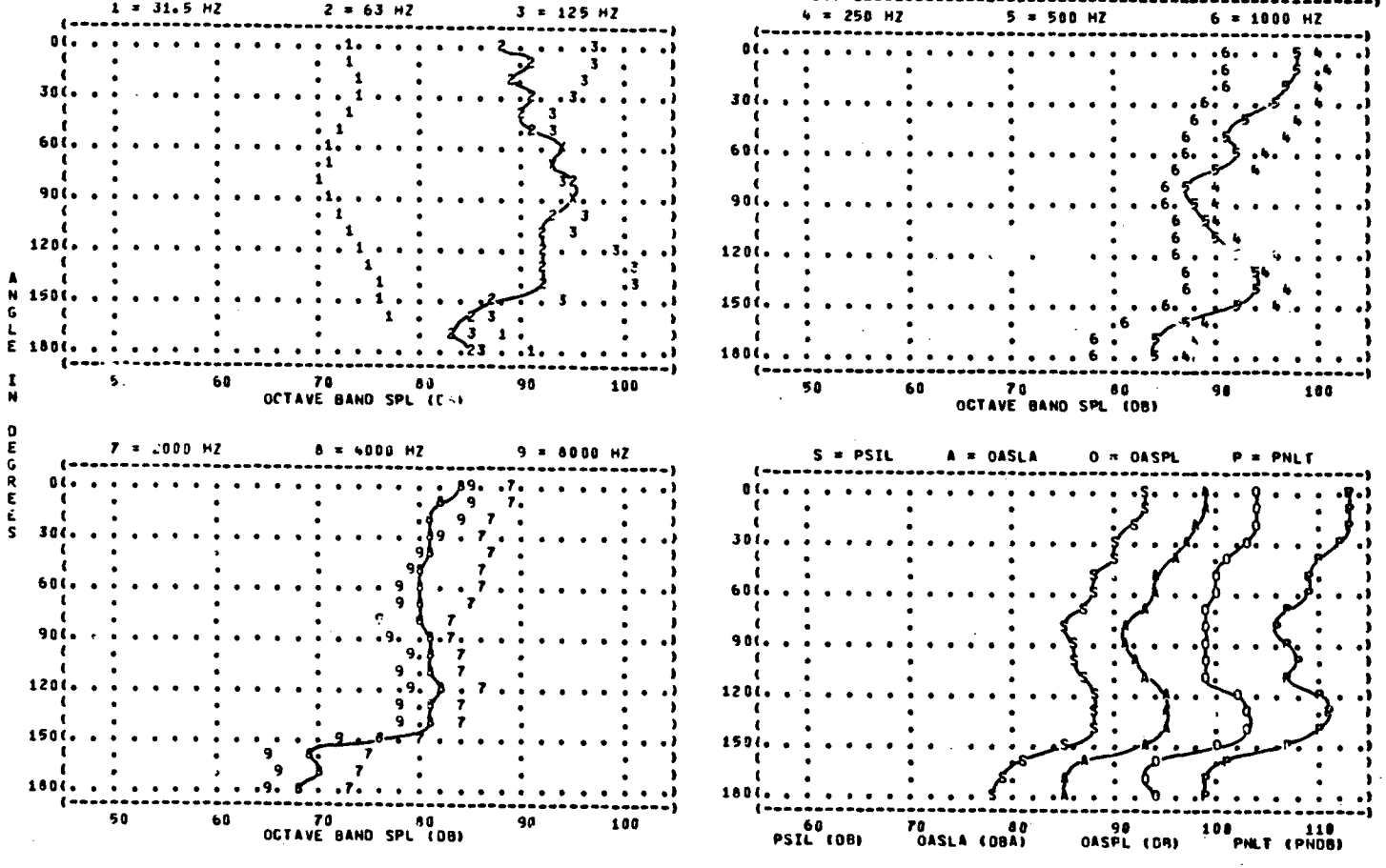


FIGURE: NORMALIZED FARFIELD NOISE LEVELS

3 DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
RUNUP POWER
9600 INCH POUNDS TORQUE
ALL ENGINES

METEORO_OGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 03
17 APR 75
PAGE 6

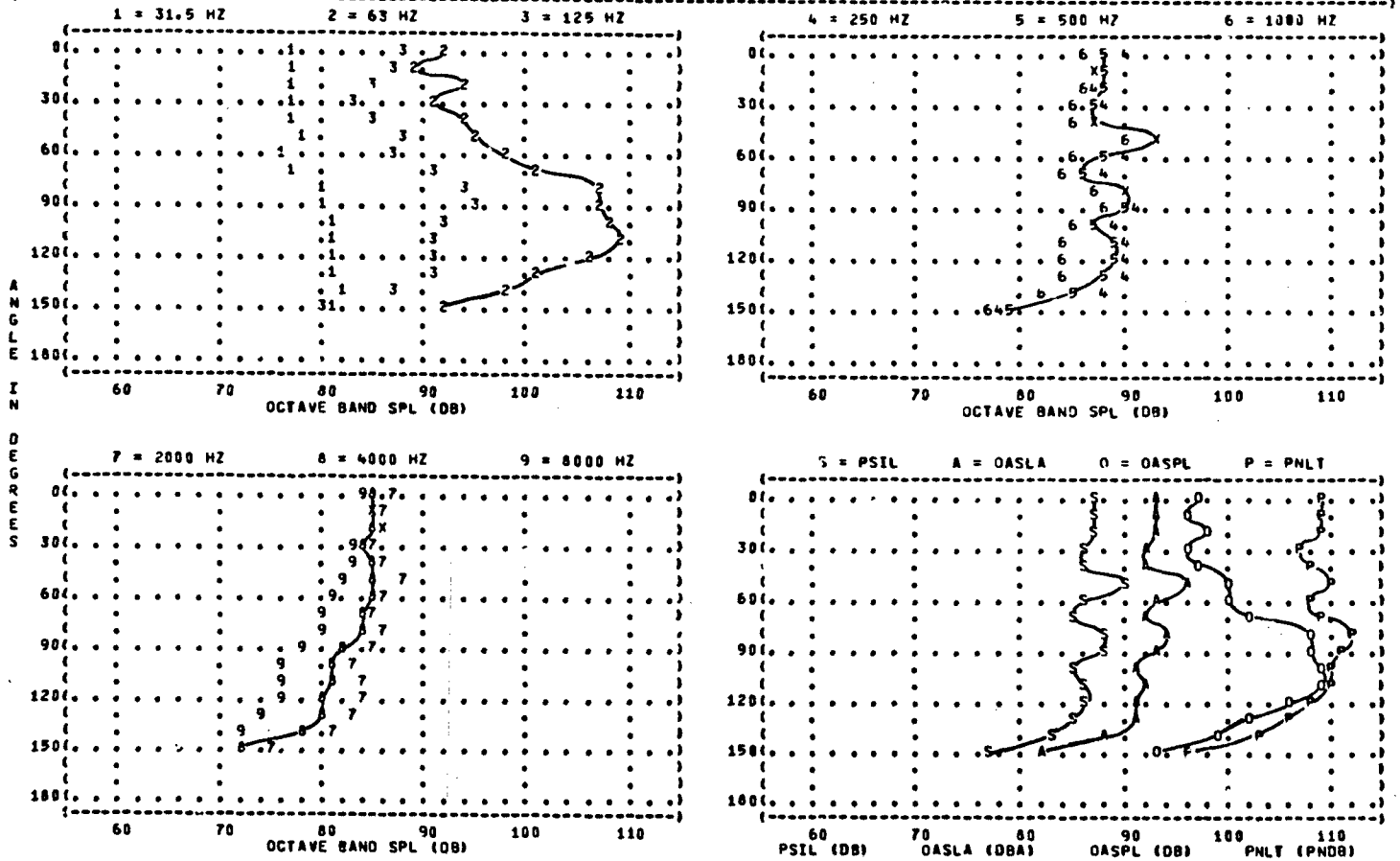


FIGURE: NORMALIZED FARFIELD NOISE LEVELS

3 DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT:

C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:

MILITARY POWER
16800 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:

TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:

OMEGA 1.4
TEST 75-002-021
RUN 04

17 APR 75

PAGE 6

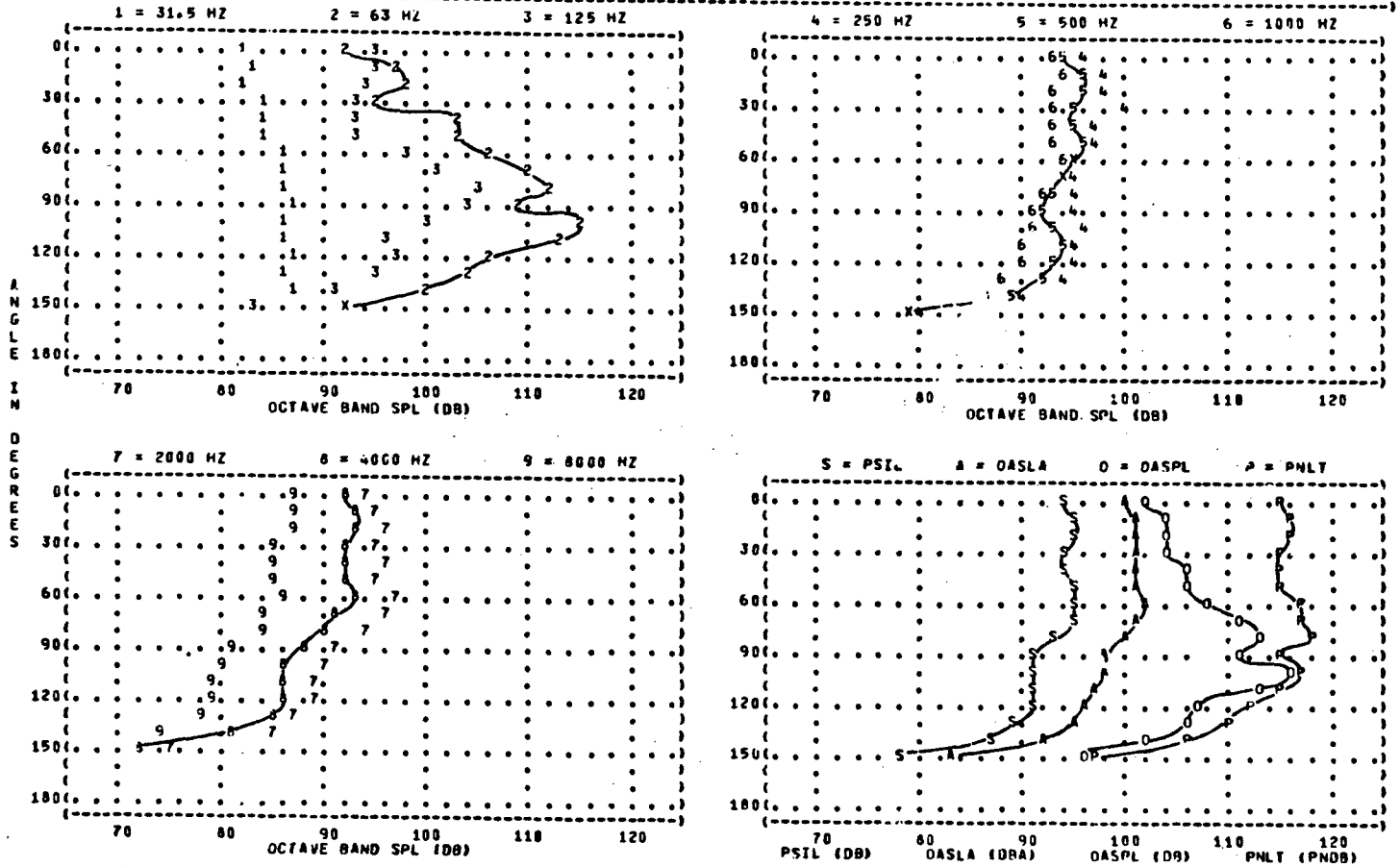


FIGURE: ACOUSTIC POWER LEVEL (PWL)

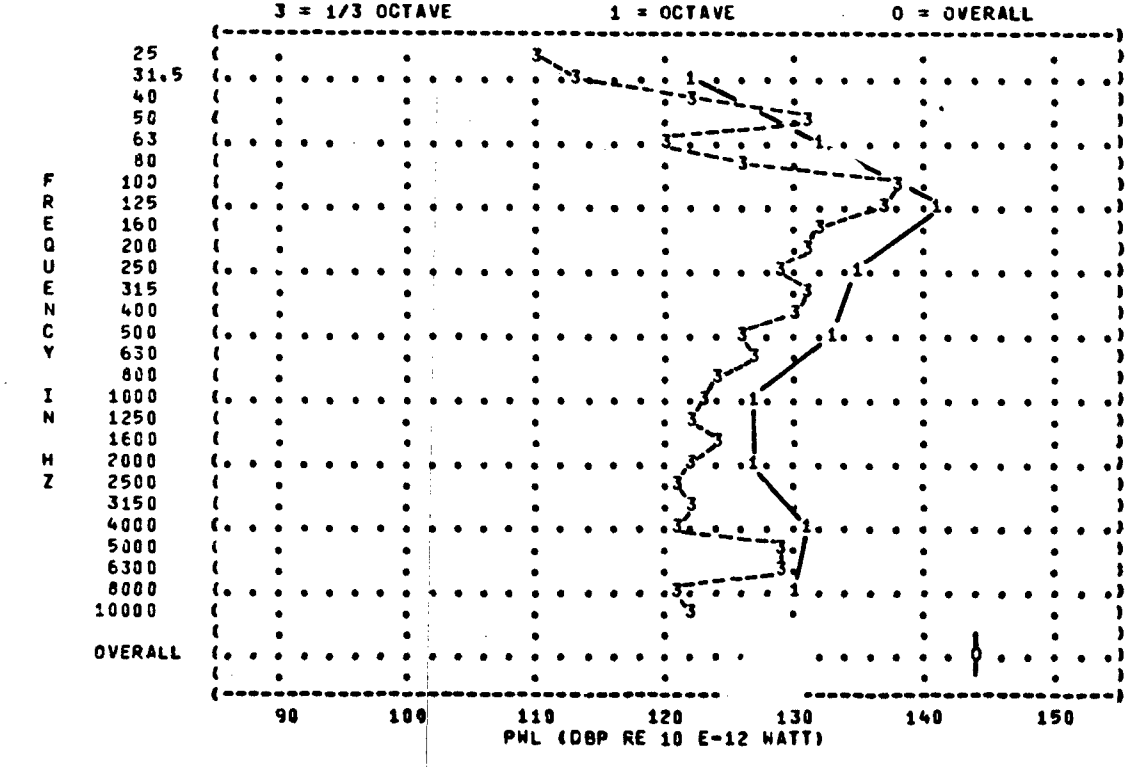
4

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER, LOW SPEED
800 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 17 C
BAR PRESS = .763 M HG
REL HUMID = 54 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 01
17 APR 75
PAGE 3




| | PWL | |
|---|---|---|
| | 1/3 OCTAVE | OCTAVE |
| | 110.5 | |
| | 112.6 | 122.4 |
| | 121.6 | |
| | 130.8 | |
| | 120.2 | 132.2 |
| | 125.8 | |
| | 138.2 | |
| | 136.8 | 141.1 |
| | 131.9 | |
| | 130.7 | |
| | 128.8 | 135.1 |
| | 131.2 | |
| | 130.2 | |
| | 126.2 | 132.9 |
| | 127.1 | |
| | 123.6 | |
| | 122.7 | 127.5 |
| | 121.6 | |
| | 123.6 | |
| | 122.4 | 127.3 |
| | 121.4 | |
| | 122.0 | |
| | 121.0 | 130.6 |
| | 129.3 | |
| | 128.9 | |
| | 121.3 | 130.3 |
| | 122.2 | |
| OVERALL | | 143.7 |

FIGURE: ACOUSTIC POWER LEVEL (PWL)

4

NOISE SOURCE/SUBJECT:

C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

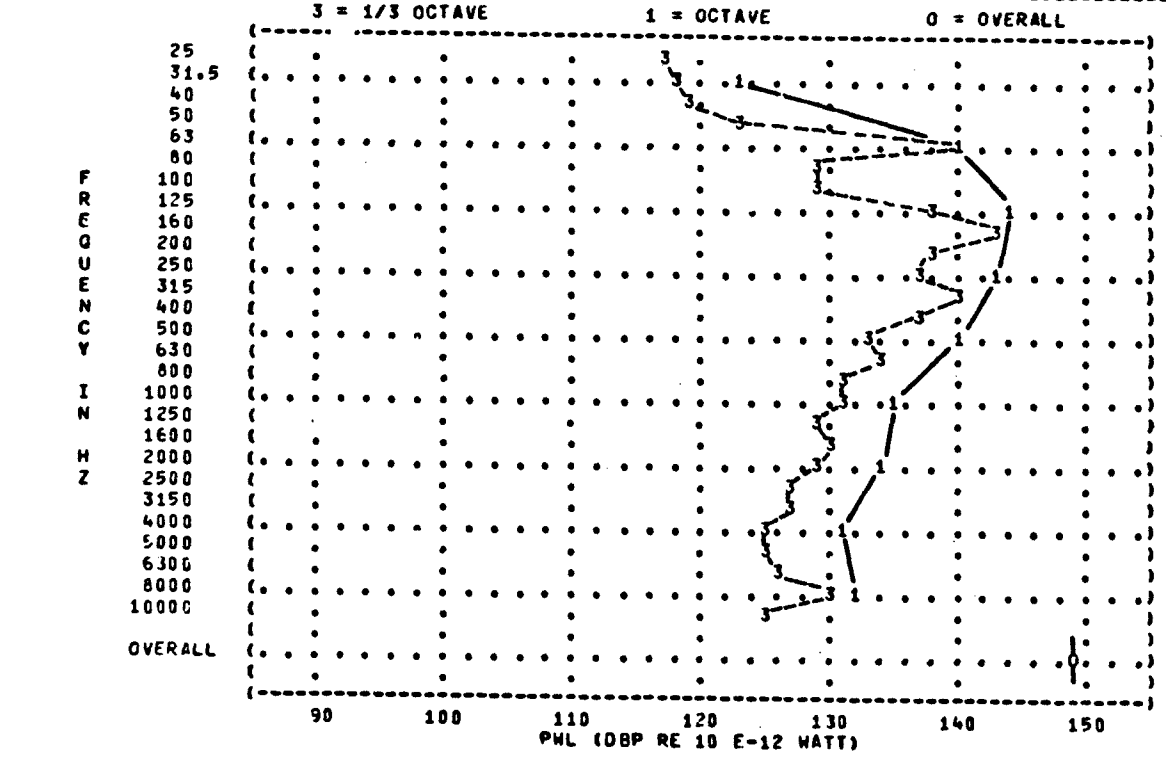
OPERATION:
IDLE POWER, NORMAL SPEED
1400 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 17 C
BAR PRESS = .763 M HG
REL HUMID = 54 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 02

17 APR 75

PAGE 3




| PWL 1/3 OCTAVE | PWL OCTAVE |
|---|---|
| 117.4 | |
| 118.1 | 123.0 |
| 118.9 | |
| 122.7 | |
| 140.0 | 140.4 |
| 128.5 | |
| 129.2 | |
| 138.3 | 144.1 |
| 142.6 | |
| 137.8 | |
| 136.9 | 143.3 |
| 140.2 | |
| 137.3 | |
| 133.4 | 140.1 |
| 134.2 | |
| 130.7 | |
| 130.6 | 134.9 |
| 128.8 | |
| 130.0 | |
| 128.7 | 133.6 |
| 127.4 | |
| 127.2 | |
| 125.5 | 130.7 |
| 124.7 | |
| 125.9 | |
| 130.2 | 132.4 |
| 124.6 | |
| | 148.9 |

FIGURE: ACOUSTIC POWER LEVEL (PWL)

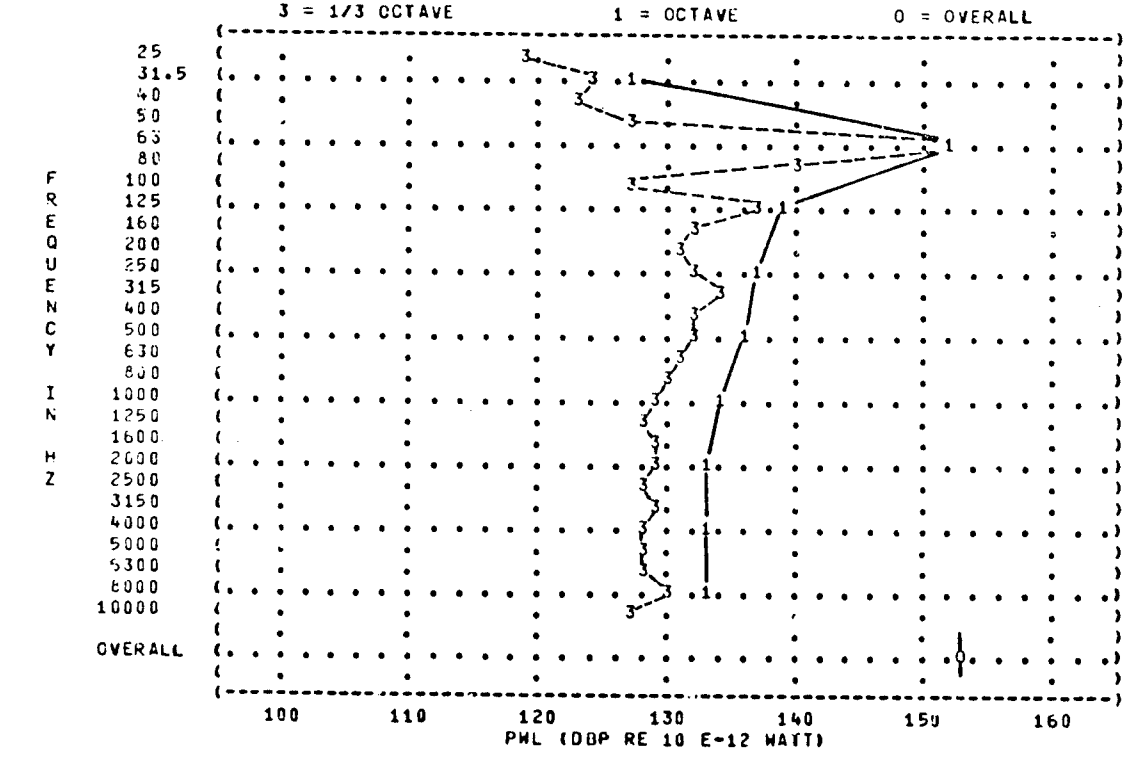
4

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
RUNUP POWER
9600 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 17 C
BAR PRESS = .763 M HG
REL HUMID = 54 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 03
17 APR 75
PAGE 3




| PWL | |
|---|---|
| 1/3 OCTAVE | OCTAVE |
| 119.3 | |
| 124.3 | 127.3 |
| 122.6 | |
| 127.1 | |
| 152.0 | 152.3 |
| 140.2 | |
| 127.2 | |
| 137.1 | 138.6 |
| 132.0 | |
| 130.9 | |
| 131.7 | 137.1 |
| 133.9 | |
| 131.8 | |
| 132.4 | 136.5 |
| 130.7 | |
| 129.8 | |
| 128.6 | 133.6 |
| 127.9 | |
| 129.4 | |
| 128.6 | 133.5 |
| 128.1 | |
| 128.8 | |
| 127.8 | 132.9 |
| 127.6 | |
| 127.8 | |
| 134.2 | 133.4 |
| 127.0 | |
| | 152.9 |

FIGURE: ACOUSTIC POWER LEVEL (PWL)

4

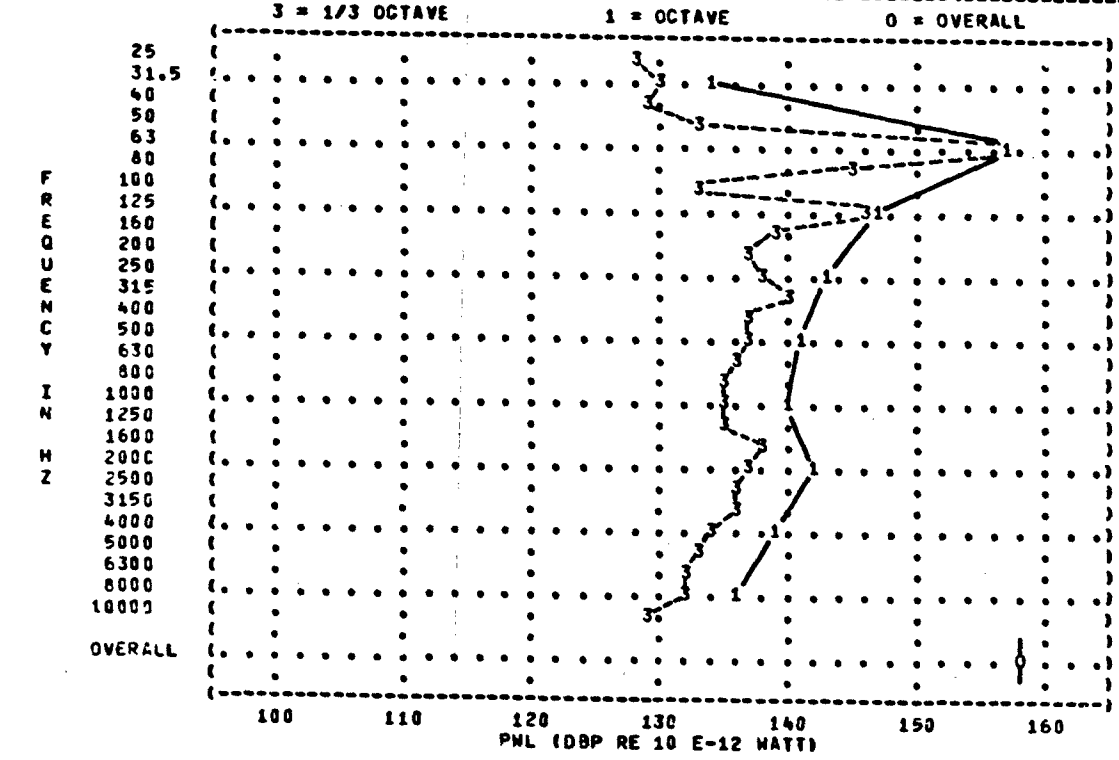
NOISE SOURCE/SUBJECT:

C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
16800 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 17 C
BAR PRESS = .763 M HG
REL HUMID = 54 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 04
17 APR 75
PAGE 3




| PWL 1/3 OCTAVE | PWL OCTAVE |
|---|---|
| 126.2 | |
| 129.9 | 133.9 |
| 129.0 | |
| 132.6 | |
| 156.9 | 157.2 |
| 145.3 | |
| 132.6 | |
| 146.2 | 147.1 |
| 139.1 | |
| 136.8 | |
| 138.3 | 143.3 |
| 139.9 | |
| 136.7 | |
| 137.5 | 141.5 |
| 135.7 | |
| 134.7 | |
| 134.9 | 139.8 |
| 135.5 | |
| 138.1 | |
| 137.2 | 141.8 |
| 135.5 | |
| 136.0 | |
| 134.2 | 139.4 |
| 133.2 | |
| 132.1 | |
| 132.1 | 136.1 |
| 129.4 | |
| | 158.2 |

TABLE: DIRECTIVITY INDEX (DB)

6

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 01
17 APR 75
PAGE 4

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER, LOW SPEED
800 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 17 C
BAR PRESS = .763 M HG
REL HUMID = 54 %

| FREQ (HZ) | ANGLE (DEGREES) 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/3 OCTAVE | | | | | | | | | | | | | | | | | | | |
| 25 | -1 | -1 | 0 | -0 | -1 | 0 | -0 | -1 | -1 | -1 | -2 | -1 | 1 | 1 | 1 | 0 | 5 | 6 | 5 |
| 31.5 | 1 | 2 | 1 | -0 | 1 | 0 | -1 | -1 | -2 | -1 | -2 | -0 | -1 | 2 | 2 | 1 | 1 | 1 | 2 |
| 40 | 4 | 6 | 5 | 4 | 3 | 1 | -1 | -3 | -4 | -3 | -4 | -1 | 0 | -0 | 0 | -0 | -2 | -2 | -1 |
| 50 | 4 | 4 | 3 | 2 | 1 | 1 | -0 | -1 | -2 | 2 | 0 | -4 | 1 | -2 | -0 | -1 | -5 | -5 | -4 |
| 63 | 2 | 3 | 2 | -0 | -1 | -1 | -2 | -1 | -2 | 0 | -1 | 1 | 1 | 2 | 2 | 1 | -3 | -3 | -2 |
| 80 | 5 | 6 | 4 | 4 | 2 | 0 | -2 | -1 | -3 | -2 | -2 | -1 | 0 | 2 | 1 | -1 | -5 | -5 | -6 |
| 100 | 0 | -2 | -3 | -3 | -1 | -4 | -2 | -0 | -0 | 3 | 2 | -1 | 2 | 2 | -0 | -5 | -9 | -10 | -9 |
| 125 | 0 | -1 | -3 | -3 | -2 | -4 | -2 | -1 | -0 | 3 | 2 | -0 | 2 | 3 | -0 | -4 | -9 | -9 | -9 |
| 160 | 3 | 2 | 2 | 2 | -1 | -0 | 1 | -2 | -3 | -2 | -1 | -0 | 1 | 2 | 2 | -1 | -4 | -6 | -8 |
| 200 | 3 | 3 | 3 | 3 | 1 | 1 | 0 | -2 | -2 | -2 | -1 | -0 | -0 | 1 | 1 | 0 | -3 | -7 | -8 |
| 250 | 4 | 3 | 3 | 2 | 1 | -0 | -1 | -3 | -4 | -2 | 0 | -1 | 1 | 1 | 2 | 3 | -2 | -6 | -5 |
| 315 | 3 | 4 | 4 | -1 | 2 | 0 | -2 | -2 | -5 | -3 | -1 | -1 | 1 | 1 | 3 | 2 | -2 | -5 | -5 |
| 400 | 4 | 2 | 3 | 2 | -0 | 0 | 0 | -1 | -2 | -2 | -3 | 0 | 0 | 2 | 1 | 0 | -4 | -6 | -8 |
| 500 | 4 | 3 | 1 | 4 | -0 | -1 | 1 | -2 | -1 | -2 | -2 | -0 | 1 | 2 | 1 | 1 | -4 | -5 | -6 |
| 630 | 2 | 2 | 1 | -2 | -1 | -2 | -3 | -2 | -3 | -2 | -1 | 1 | 3 | 3 | 3 | 0 | -5 | -4 | -4 |
| 800 | 4 | 2 | 1 | 3 | 0 | 0 | 2 | -0 | -0 | -1 | -4 | 0 | 1 | 2 | 1 | -1 | -6 | -6 | -6 |
| 1000 | 2 | 3 | 2 | 1 | 1 | 0 | 0 | 0 | -1 | 1 | -1 | -0 | 0 | 2 | 1 | -2 | -4 | -5 | -7 |
| 1250 | 2 | 2 | 2 | 3 | 1 | 1 | 1 | -1 | -2 | 1 | -1 | -0 | -1 | 0 | -0 | -3 | -5 | -8 | -9 |
| 1600 | 1 | 3 | 2 | 3 | 0 | -0 | 0 | -1 | -1 | 1 | 0 | 1 | 0 | 0 | -0 | -3 | -6 | -10 | -10 |
| 2000 | 1 | 1 | 2 | 0 | 0 | -1 | -1 | -1 | -2 | -0 | -1 | 1 | 3 | 1 | -0 | -4 | -7 | -9 | -11 |
| 2500 | 3 | 2 | 2 | 0 | -1 | -0 | -1 | -1 | -2 | 0 | 0 | 2 | 2 | 2 | -0 | -3 | -7 | -9 | -10 |
| 3150 | 4 | 3 | 2 | 1 | -1 | -0 | -1 | -2 | -2 | 0 | 0 | 1 | 1 | 3 | 0 | -3 | -6 | -8 | -10 |
| 4000 | 5 | 4 | 1 | 1 | -1 | -1 | -1 | -2 | -2 | -0 | 1 | 2 | 2 | 2 | 1 | -3 | -6 | -8 | -9 |
| 5000 | 7 | 6 | 8 | 5 | 4 | 4 | -0 | -4 | -5 | -4 | -4 | -4 | -4 | -2 | -5 | -8 | -12 | -14 | -15 |
| 6300 | 5 | 4 | 4 | 2 | 2 | 0 | -1 | -3 | -3 | -1 | -1 | -0 | 0 | 2 | 1 | -3 | -6 | -8 | -9 |
| 8000 | 5 | 5 | 3 | 1 | 0 | -0 | -1 | -3 | -3 | -1 | -0 | 1 | 1 | 3 | 0 | -3 | -7 | -9 | -10 |
| 10000 | 7 | 7 | 6 | 4 | 3 | 2 | -1 | -5 | -5 | -2 | -2 | -0 | -1 | 1 | -2 | -6 | -10 | -12 | -13 |
| OCTAVE | | | | | | | | | | | | | | | | | | | |
| 31.5 | 4 | 5 | 4 | 3 | 3 | 1 | -1 | -3 | -4 | -3 | -3 | -1 | 0 | 0 | 1 | 0 | -1 | -0 | -0 |
| 63 | 4 | 4 | 3 | 2 | 1 | 1 | -1 | -1 | -2 | 1 | -0 | -1 | 1 | -0 | 0 | -1 | -5 | -5 | -4 |
| 125 | 1 | -1 | -2 | -2 | -1 | -3 | -2 | -1 | -1 | 2 | 2 | -1 | 2 | 2 | -0 | -4 | -8 | -9 | -9 |
| 250 | 3 | 4 | 3 | 2 | 1 | 0 | -1 | -2 | -3 | -2 | -1 | -1 | 1 | 1 | 2 | 2 | -3 | -6 | -6 |
| 500 | 4 | 2 | 2 | 2 | -0 | -0 | -0 | -2 | -2 | -2 | -2 | 0 | 1 | 2 | 2 | 0 | -4 | -5 | -6 |
| 1000 | 3 | 2 | 1 | 2 | 1 | 0 | 1 | -0 | -1 | -0 | -2 | -0 | 0 | 1 | 0 | -2 | -5 | -6 | -7 |
| 2000 | 2 | 2 | 2 | 1 | 0 | -0 | -0 | -1 | -1 | 0 | -0 | 1 | 2 | 1 | -0 | -3 | -6 | -9 | -10 |
| 4000 | 6 | 5 | 7 | 4 | 3 | 3 | -0 | -4 | -4 | -3 | -2 | -2 | -2 | -0 | -3 | -6 | -9 | -11 | -13 |
| 8000 | 5 | 5 | 4 | 2 | 2 | 0 | -1 | -3 | -3 | -1 | -1 | -0 | 0 | 2 | 1 | -3 | -6 | -8 | -10 |
| OVERALL | 2 | 1 | 1 | 0 | -0 | -1 | -1 | -1 | -1 | 1 | 1 | -1 | 1 | 2 | 0 | -2 | -6 | -7 | -7 |

TABLE: DIRECTIVITY INDEX (DB)

6

NOISE SOURCE/SUBJECT:

C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER, NORMAL SPEED
1400 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 17 C
BAR PRESS = .763 M HG
REL HUMID = 54 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 02

17 APR 75

PAGE 4

| FREQ (HZ) | ANGLE (DEGREES) 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/3 OCTAVE | | | | | | | | | | | | | | | | | | | |
| 25 | -6 | -4 | -4 | -6 | -6 | -6 | -5 | -5 | -7 | -6 | -5 | -4 | -4 | -2 | -0 | -1 | 3 | 15 | 18 |
| 31.5 | -3 | -3 | -2 | -1 | -0 | -2 | -5 | -5 | -5 | -4 | -4 | -3 | -0 | 0 | 1 | 0 | 1 | 13 | 15 |
| 40 | -1 | -1 | -1 | -1 | -1 | -4 | -3 | -3 | -3 | -2 | -1 | -1 | 0 | 1 | 2 | 2 | 1 | 10 | 12 |
| 50 | 1 | 1 | 0 | 1 | -0 | -2 | -0 | -1 | -1 | -1 | -1 | -0 | 1 | 1 | 1 | 0 | -1 | 4 | 6 |
| 63 | -5 | -2 | -4 | -2 | -3 | -2 | 1 | 1 | 3 | 3 | 1 | -1 | -1 | -1 | -2 | -7 | -9 | -13 | -11 |
| 80 | -1 | -0 | -1 | -2 | -2 | -3 | -1 | -1 | 0 | 1 | -0 | -0 | 1 | 1 | 3 | -0 | -3 | -5 | -5 |
| 100 | -1 | -0 | -1 | -2 | -2 | -3 | -2 | -3 | -4 | -3 | -1 | 1 | 4 | 3 | 4 | -0 | -5 | -7 | -6 |
| 125 | 4 | 5 | 4 | 3 | 1 | 1 | 0 | -1 | -1 | -2 | -4 | -3 | 0 | 1 | 3 | -2 | -8 | -11 | -10 |
| 160 | -3 | -4 | -5 | -5 | -7 | -7 | -4 | -5 | -2 | -1 | 1 | -1 | 3 | 5 | 5 | -3 | -10 | -11 | -10 |
| 200 | 5 | 5 | 4 | 5 | 4 | -0 | -1 | -3 | -5 | -6 | -5 | -3 | -0 | 1 | 4 | 1 | -7 | -9 | -9 |
| 250 | 4 | 5 | 6 | 4 | 2 | 2 | 1 | -2 | -4 | -5 | -6 | -4 | 1 | -3 | -0 | 1 | -6 | -6 | -7 |
| 315 | 5 | 5 | 5 | 4 | 2 | 2 | 0 | -1 | -6 | -6 | -5 | -2 | 1 | -0 | 1 | 1 | -6 | -8 | -9 |
| 400 | 6 | 5 | 5 | 4 | 2 | -1 | -0 | -2 | -6 | -5 | -3 | -3 | -0 | 3 | 3 | -1 | -6 | -9 | -8 |
| 500 | 5 | 6 | 5 | 4 | 1 | 1 | -0 | -2 | -2 | -4 | -3 | -2 | -0 | -0 | 2 | 1 | -4 | -5 | -7 |
| 630 | 6 | 6 | 5 | 4 | 1 | -1 | -0 | -1 | -5 | -2 | -2 | -1 | -0 | 1 | -0 | -0 | -5 | -9 | -8 |
| 800 | 5 | 5 | 5 | 3 | 2 | 0 | -1 | -0 | -2 | -2 | -1 | -1 | -1 | 1 | 0 | -1 | -4 | -7 | -8 |
| 1000 | 5 | 4 | 4 | 3 | 2 | -1 | -0 | -0 | -2 | -1 | -0 | -0 | -0 | 1 | -0 | -2 | -5 | -9 | -9 |
| 1250 | 4 | 4 | 3 | 2 | 2 | 1 | 2 | 0 | -2 | -1 | -1 | -2 | 0 | -1 | -0 | -3 | -6 | -10 | -8 |
| 1600 | 3 | 4 | 1 | 1 | 2 | 2 | 1 | 0 | -1 | -2 | -1 | -1 | 1 | -1 | -0 | -4 | -9 | -11 | -12 |
| 2000 | 4 | 4 | 2 | 1 | 2 | 1 | 1 | 1 | -2 | -2 | -1 | -1 | 1 | -0 | -1 | -5 | -11 | -11 | -13 |
| 2500 | 6 | 5 | 4 | 1 | 2 | -0 | 0 | -0 | -1 | -1 | -0 | 0 | 1 | 1 | -1 | -5 | -11 | -10 | -13 |
| 3150 | 3 | 2 | 1 | 1 | 0 | 0 | 0 | -0 | -1 | -0 | 1 | 0 | 1 | 1 | -1 | -4 | -12 | -11 | -13 |
| 4000 | 3 | 2 | 1 | 0 | 0 | -0 | -0 | -0 | -0 | 0 | 1 | 1 | 2 | 1 | 0 | -4 | -11 | -10 | -12 |
| 5000 | 3 | 2 | 1 | -0 | -0 | -1 | -2 | -0 | -1 | 0 | 1 | 1 | 2 | 1 | 1 | -5 | -12 | -11 | -13 |
| 6300 | 6 | 5 | 4 | 2 | 0 | -0 | -1 | -1 | -2 | -1 | 1 | 1 | 1 | 0 | -1 | -6 | -13 | -12 | -14 |
| 8000 | 8 | 7 | 6 | 4 | 2 | 0 | -0 | -1 | -4 | -2 | -1 | -2 | -0 | -1 | -1 | -8 | -15 | -13 | -15 |
| 10000 | 2 | 1 | 0 | -1 | -2 | -3 | -2 | -1 | -1 | 1 | 2 | 2 | 3 | 1 | 1 | -5 | -11 | -11 | -11 |
| OCTAVE | | | | | | | | | | | | | | | | | | | |
| 31.5 | -2 | -2 | -2 | -2 | -2 | -4 | -4 | -4 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 1 | 2 | 13 | 16 |
| 63 | -4 | -2 | -4 | -2 | -2 | -2 | 1 | 1 | 3 | 3 | 1 | -0 | -1 | -0 | -1 | -5 | -8 | -10 | -8 |
| 125 | 0 | 0 | -0 | -1 | -3 | -3 | -3 | -3 | -2 | -1 | -0 | -1 | 3 | 5 | 4 | -3 | -9 | -11 | -10 |
| 250 | 5 | 5 | 5 | 4 | 3 | 1 | 0 | -2 | -5 | -6 | -5 | -3 | 0 | -0 | 2 | 1 | -6 | -8 | -8 |
| 500 | 6 | 6 | 5 | 4 | 1 | -1 | -0 | -2 | -5 | -4 | -3 | -2 | -0 | 2 | 2 | -0 | -5 | -8 | -8 |
| 1000 | 5 | 4 | 4 | 3 | 2 | 0 | -0 | -0 | -2 | -1 | -1 | -1 | -0 | 0 | 0 | -2 | -5 | -9 | -8 |
| 2000 | 4 | 4 | 2 | 1 | 2 | 1 | 1 | 0 | -1 | -1 | -1 | -1 | 1 | -0 | -1 | -5 | -10 | -11 | -12 |
| 4000 | 3 | 2 | 1 | 0 | 0 | -0 | -0 | -0 | -1 | -0 | 1 | 1 | 2 | 1 | -0 | -4 | -12 | -11 | -13 |
| 8000 | 7 | 6 | 5 | 3 | 1 | -0 | -1 | -1 | -3 | -1 | -0 | -0 | 1 | -1 | -1 | -7 | -14 | -13 | -14 |
| OVERALL | 3 | 3 | 3 | 2 | 0 | -1 | -0 | -2 | -2 | -1 | -1 | -2 | 1 | 2 | 3 | -1 | -7 | -8 | -6 |

TABLE: DIRECTIVITY INDEX (DB)

6

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
RUNUP POWER
9600 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 17 C
BAR PRESS = .763 M HG
REL HUMID = 54 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 03
17 APR 75
PAGE 4

| FREQ (HZ) | ANGLE (DEGREES) 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/3 OCTAVE | | | | | | | | | | | | | | | | | | | |
| 25 | -1 | -3 | -3 | -4 | -2 | -2 | -1 | -1 | 1 | 0 | 1 | 1 | 2 | 2 | 2 | -0 | | | |
| 31.5 | -2 | -2 | -3 | -2 | -3 | -2 | -4 | -3 | -0 | 1 | 2 | 1 | 1 | 1 | 2 | 3 | | | |
| 40 | -3 | -3 | -2 | -3 | -3 | -3 | -3 | -2 | 0 | 1 | 1 | 2 | 1 | 2 | 2 | 0 | | | |
| 50 | -5 | -5 | -4 | -6 | -5 | -5 | -3 | -1 | 2 | 3 | 3 | 3 | 2 | -1 | -1 | -3 | | | |
| 63 | -13 | -16 | -10 | -13 | -11 | -9 | -6 | -3 | 3 | 3 | 4 | 5 | 1 | -3 | -7 | -13 | | | |
| 80 | -11 | -13 | -9 | -12 | -10 | -9 | -6 | -3 | 3 | 3 | 4 | 4 | 1 | -3 | -7 | -11 | | | |
| 100 | -0 | -1 | -2 | -4 | -2 | -2 | -1 | -1 | -1 | 0 | 1 | 2 | 3 | 3 | -0 | -4 | | | |
| 125 | -4 | -5 | -8 | -9 | -7 | -2 | -4 | 1 | 4 | 4 | 2 | -1 | -1 | -1 | -6 | -13 | | | |
| 160 | -0 | -2 | -4 | -5 | -4 | -3 | -2 | -1 | 2 | 3 | 1 | 2 | 1 | 2 | -1 | -11 | | | |
| 200 | -0 | -1 | -3 | -2 | -2 | 3 | -0 | -1 | 0 | 1 | 0 | 2 | -0 | 0 | -0 | -12 | | | |
| 250 | 1 | -3 | -2 | -0 | -2 | 2 | -0 | -1 | 1 | 3 | -0 | 0 | 0 | 1 | -0 | -12 | | | |
| 315 | 2 | -2 | -2 | -1 | -2 | 5 | 1 | -2 | 1 | 1 | -0 | -0 | 1 | 1 | -2 | -11 | | | |
| 400 | -0 | 0 | -0 | -2 | -1 | 4 | -1 | -3 | 1 | 1 | -1 | 1 | 1 | 0 | -3 | -10 | | | |
| 500 | -2 | -2 | -0 | -1 | -1 | 6 | -1 | -2 | 1 | 1 | -1 | 0 | -0 | -1 | -3 | -9 | | | |
| 630 | 2 | 2 | 1 | 0 | -1 | 4 | -0 | -3 | 2 | 2 | -1 | -0 | -0 | -1 | -4 | -9 | | | |
| 800 | -1 | 1 | -1 | -1 | -0 | 5 | -0 | -3 | 1 | 2 | -1 | -1 | -1 | -2 | -4 | -8 | | | |
| 1000 | 3 | 2 | 2 | 1 | -0 | 4 | -0 | -1 | 1 | 3 | -1 | -1 | -1 | -2 | -3 | -8 | | | |
| 1250 | 1 | 1 | 1 | 0 | -0 | 3 | 0 | -0 | 2 | 2 | -1 | -1 | -2 | -1 | -4 | -9 | | | |
| 1600 | 1 | 0 | 0 | -0 | 1 | 4 | 1 | 1 | 2 | 1 | -1 | -1 | -1 | -1 | -3 | -10 | | | |
| 2000 | 2 | 1 | 1 | 0 | 2 | 3 | 2 | 0 | 2 | 0 | -1 | -1 | -1 | -1 | -3 | -10 | | | |
| 2500 | 4 | 4 | 3 | 1 | 2 | 2 | 1 | 1 | 1 | -0 | -1 | -2 | -1 | -2 | -4 | -10 | | | |
| 3150 | 3 | 2 | 3 | 1 | 2 | 2 | 2 | 2 | 2 | -1 | -2 | -2 | -2 | -2 | -4 | -10 | | | |
| 4000 | 2 | 2 | 2 | 1 | 2 | 3 | 2 | 1 | 2 | -1 | -2 | -2 | -2 | -3 | -5 | -11 | | | |
| 5000 | 2 | 2 | 3 | 1 | 2 | 3 | 2 | 2 | 1 | -1 | -2 | -2 | -2 | -4 | -5 | -12 | | | |
| 6300 | 3 | 4 | 5 | 2 | 3 | 3 | 2 | 1 | 1 | -2 | -3 | -3 | -3 | -5 | -7 | -13 | | | |
| 8000 | 6 | 7 | 8 | 5 | 3 | 2 | 1 | -0 | -1 | -3 | -5 | -4 | -4 | -7 | -9 | -16 | | | |
| 10000 | 1 | 2 | 3 | 1 | 2 | 2 | 2 | 1 | 1 | -1 | -1 | -2 | -1 | -2 | -4 | -11 | | | |
| OCTAVE | | | | | | | | | | | | | | | | | | | |
| 31.5 | -2 | -2 | -3 | -2 | -3 | -2 | -3 | -2 | 0 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | | | |
| 63 | -12 | -16 | -10 | -13 | -11 | -9 | -6 | -3 | 3 | 3 | 4 | 5 | 1 | -3 | -7 | -13 | | | |
| 125 | -3 | -4 | -6 | -8 | -6 | -2 | -3 | 0 | 4 | 4 | 2 | 0 | 0 | 0 | -3 | -11 | | | |
| 250 | 1 | -2 | -3 | -1 | -2 | 4 | 0 | -2 | 1 | 2 | -0 | 1 | 0 | 1 | -1 | -11 | | | |
| 500 | -0 | -0 | -0 | -1 | -1 | 5 | -1 | -3 | 1 | 1 | -1 | 0 | 0 | -1 | -3 | -9 | | | |
| 1000 | 1 | 1 | 1 | -0 | -0 | 4 | -0 | -1 | 1 | 3 | -1 | -1 | -1 | -2 | -4 | -8 | | | |
| 2000 | 2 | 2 | 1 | 0 | 1 | 3 | 1 | 1 | 2 | 0 | -1 | -1 | -1 | -2 | -4 | -10 | | | |
| 4000 | 2 | 2 | 3 | 1 | 2 | 3 | 2 | 2 | 2 | -1 | -2 | -2 | -2 | -3 | -5 | -11 | | | |
| 8000 | 4 | 6 | 6 | 3 | 3 | 2 | 2 | 1 | 0 | -2 | -3 | -3 | -3 | -5 | -7 | -14 | | | |
| OVERALL | -8 | -9 | -7 | -9 | -8 | -5 | -5 | -3 | 3 | 3 | 4 | 4 | 1 | -3 | -6 | -12 | | | |

TABLE: DIRECTIVITY INDEX (DB)

6

NOISE SOURCE/SUBJECT:

C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
16800 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 17 C
BAR PRESS = .763 M HG
REL HUMID = 54 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 04
17 APR 75
PAGE 4

| FREQ (HZ) | ANGLE (DEGREES) 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/3 OCTAVE | | | | | | | | | | | | | | | | | | | |
| 25 | -3 | -4 | -4 | -4 | -3 | -2 | 0 | -0 | -0 | 0 | -0 | -1 | 1 | -0 | -0 | 7 | | | |
| 31.5 | -5 | -4 | -4 | -2 | -2 | -3 | -0 | -0 | 1 | 1 | -1 | -0 | 1 | 0 | 1 | 6 | | | |
| 40 | -3 | -2 | -2 | -1 | -2 | -2 | -1 | -1 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 4 | | | |
| 50 | -4 | -3 | -4 | -4 | -4 | -3 | -1 | -0 | 1 | 1 | 4 | 2 | -1 | -0 | -2 | -2 | | | |
| 63 | -18 | -13 | -12 | -15 | -7 | -6 | -3 | 1 | 3 | -0 | 6 | 4 | -4 | -5 | -10 | -18 | | | |
| 80 | -13 | -10 | -10 | -12 | -7 | -6 | -3 | 1 | 3 | 0 | 6 | 4 | -4 | -5 | -8 | -15 | | | |
| 100 | 1 | 1 | 0 | -1 | -1 | -1 | -0 | -1 | -1 | -1 | 1 | 1 | 2 | 1 | -1 | -7 | | | |
| 125 | -7 | -6 | -7 | -8 | -9 | -7 | -1 | 2 | 6 | 5 | 0 | -4 | -3 | -5 | -12 | -19 | | | |
| 160 | -1 | -1 | -2 | -3 | -3 | -4 | -1 | 1 | 4 | 3 | 1 | -1 | -1 | -1 | -4 | -15 | | | |
| 200 | 1 | 4 | 1 | 4 | 3 | 1 | -1 | 1 | -1 | 1 | 1 | -0 | -1 | -1 | -4 | -14 | | | |
| 250 | 1 | 3 | 4 | 5 | 2 | 1 | 1 | -0 | -1 | -1 | 0 | -1 | -0 | -1 | -6 | -17 | | | |
| 315 | -0 | 2 | 3 | 4 | 1 | 3 | -0 | -1 | -1 | -0 | 0 | -0 | -1 | -1 | -5 | -16 | | | |
| 400 | 0 | 2 | 3 | 1 | 2 | 3 | 1 | 0 | -1 | -2 | -1 | 1 | 0 | -2 | -3 | -14 | | | |
| 500 | 0 | 2 | 2 | 2 | 1 | 3 | 2 | 2 | -0 | -0 | 0 | -0 | -1 | -2 | -6 | -15 | | | |
| 630 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 0 | -1 | -1 | -0 | -1 | -3 | -4 | -13 | | | |
| 800 | 2 | 4 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | -1 | 0 | -0 | -1 | -2 | -5 | -12 | | | |
| 1000 | 1 | 3 | 1 | 1 | 1 | 1 | 3 | 2 | 1 | -1 | -0 | -1 | -1 | -3 | -4 | -12 | | | |
| 1250 | -1 | 1 | 0 | 1 | 1 | 2 | 3 | 3 | 1 | -1 | -1 | -3 | -2 | -5 | -6 | -15 | | | |
| 1600 | -0 | 1 | 2 | 1 | 2 | 2 | 5 | 3 | 1 | -2 | -3 | -4 | -4 | -6 | -8 | -18 | | | |
| 2000 | 1 | 1 | 3 | 2 | 3 | 2 | 4 | 3 | 1 | -3 | -4 | -4 | -5 | -6 | -9 | -18 | | | |
| 2500 | 2 | 3 | 3 | 2 | 3 | 3 | 3 | 2 | 1 | -2 | -2 | -3 | -3 | -5 | -7 | -17 | | | |
| 3150 | 2 | 4 | 3 | 3 | 2 | 2 | 4 | 2 | 1 | -1 | -3 | -4 | -3 | -5 | -8 | -17 | | | |
| 4000 | 2 | 4 | 4 | 2 | 3 | 2 | 3 | 1 | 1 | -2 | -3 | -4 | -3 | -4 | -8 | -18 | | | |
| 5000 | 3 | 4 | 4 | 2 | 2 | 2 | 4 | 2 | 1 | -2 | -3 | -4 | -3 | -5 | -8 | -17 | | | |
| 6300 | 3 | 4 | 4 | 2 | 2 | 2 | 3 | 1 | 2 | -2 | -3 | -4 | -4 | -4 | -8 | -18 | | | |
| 8000 | 5 | 5 | 6 | 3 | 3 | 2 | 3 | 1 | 1 | -3 | -4 | -4 | -4 | -5 | -9 | -19 | | | |
| 10000 | 3 | 4 | 4 | 2 | 2 | 2 | 3 | 1 | 2 | -1 | -1 | -2 | -2 | -4 | -8 | -17 | | | |
| OCTAVE | | | | | | | | | | | | | | | | | | | |
| 31.5 | -4 | -3 | -4 | -2 | -2 | -2 | -0 | -1 | 0 | 1 | -0 | 0 | 1 | 0 | 1 | 6 | | | |
| 63 | -17 | -13 | -12 | -15 | -7 | -6 | -3 | 1 | 3 | -0 | 6 | 4 | -4 | -5 | -9 | -17 | | | |
| 125 | -4 | -4 | -5 | -6 | -7 | -6 | -1 | 2 | 5 | 4 | 0 | -3 | -2 | -4 | -9 | -16 | | | |
| 250 | 1 | 3 | 3 | 4 | 2 | 2 | -0 | -0 | -1 | -0 | 0 | -0 | -1 | -1 | -5 | -16 | | | |
| 500 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 1 | -0 | -1 | -0 | 0 | -0 | -2 | -4 | -14 | | | |
| 1000 | 1 | 3 | 1 | 1 | 1 | 2 | 3 | 2 | 1 | -1 | -0 | -1 | -2 | -3 | -5 | -13 | | | |
| 2000 | 1 | 2 | 3 | 2 | 3 | 2 | 4 | 3 | 1 | -2 | -3 | -4 | -4 | -6 | -8 | -18 | | | |
| 4000 | 2 | 4 | 4 | 2 | 2 | 2 | 4 | 2 | 1 | -2 | -3 | -4 | -3 | -5 | -8 | -17 | | | |
| 8000 | 4 | 5 | 5 | 2 | 3 | 2 | 3 | 1 | 1 | -2 | -3 | -4 | -4 | -5 | -9 | -18 | | | |
| OVERALL | -8 | -6 | -6 | -6 | -5 | -4 | -2 | 1 | 3 | 0 | 5 | 3 | -3 | -5 | -9 | -15 | | | |

FIGURE 5 OVERALL SOUND PRESSURE LEVEL (OASPL) EQUAL LEVEL CONTOURS (DB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 01
17 APR 75
PAGE 13

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER, LOW SPEED
600 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

| POINT | DB |
|---|---|
| A | 45 |
| B | 50 |
| C | 55 |
| D | 60 |
| E | 65 |
| F | 70 |
| G | 75 |
| H | 80 |
| I | 85 |
| J | 90 |
| K | 95 |
| L | 100 |

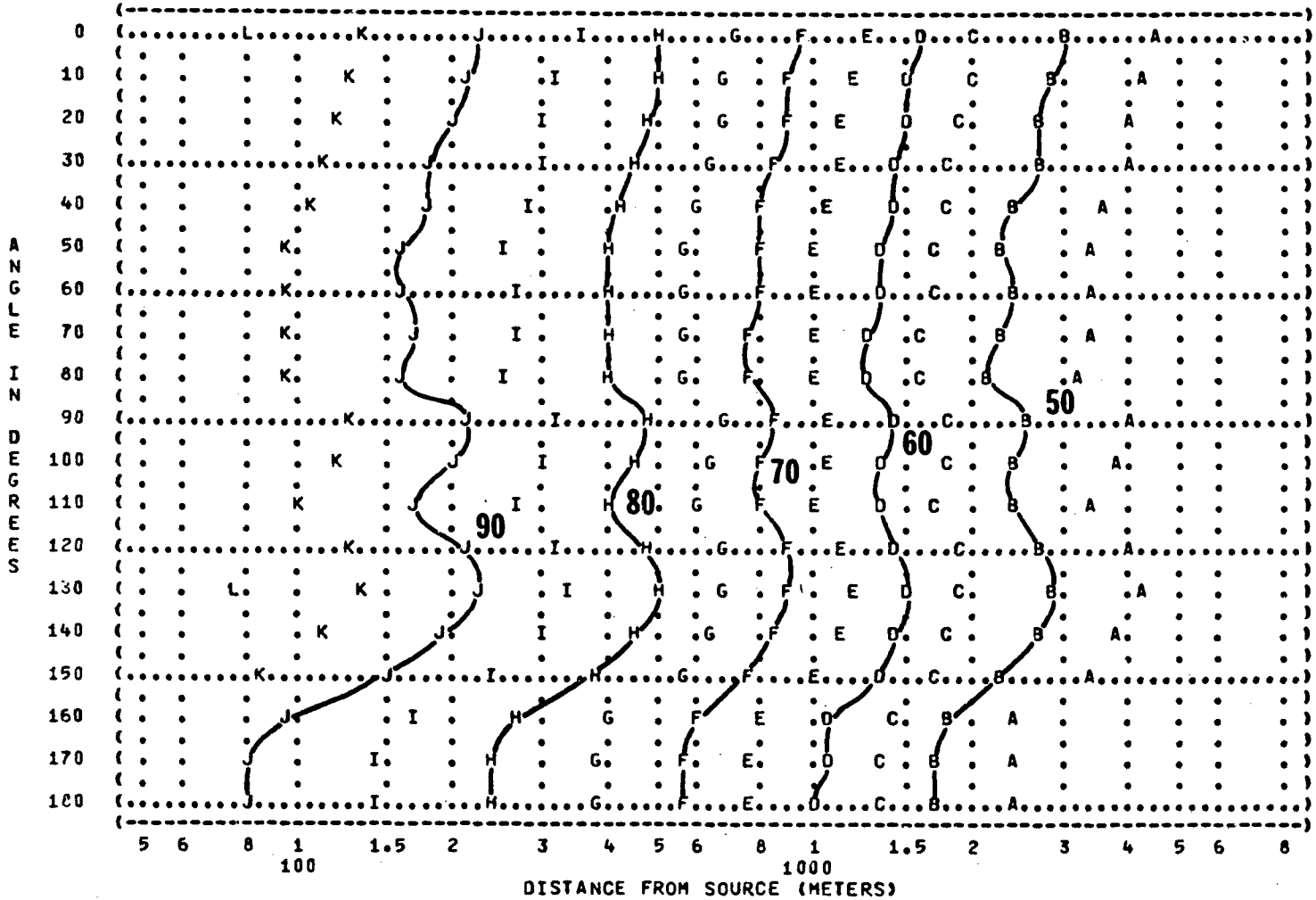


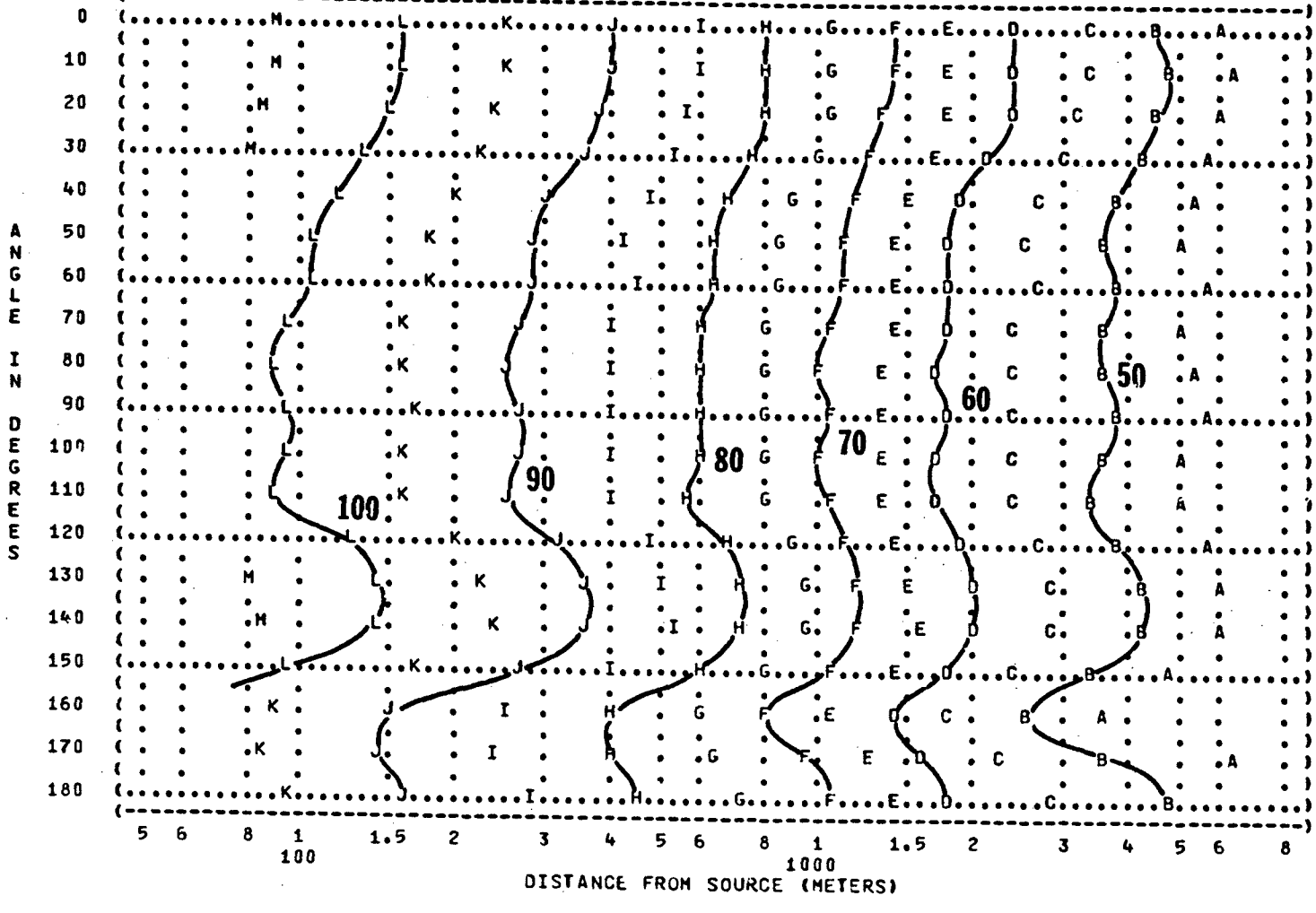
FIGURE 5: OVERALL SOUND PRESSURE LEVEL (OASPL) EQUAL LEVEL CONTOURS (DB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 02
17 APR 75
PAGE 13

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER, NORMAL SPEED
1400 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %




| POINT | DB |
|---|---|
| A | 45 |
| B | 50 |
| C | 55 |
| D | 60 |
| E | 65 |
| F | 70 |
| G | 75 |
| H | 80 |
| I | 85 |
| J | 90 |
| K | 95 |
| L | 100 |
| M | 105 |

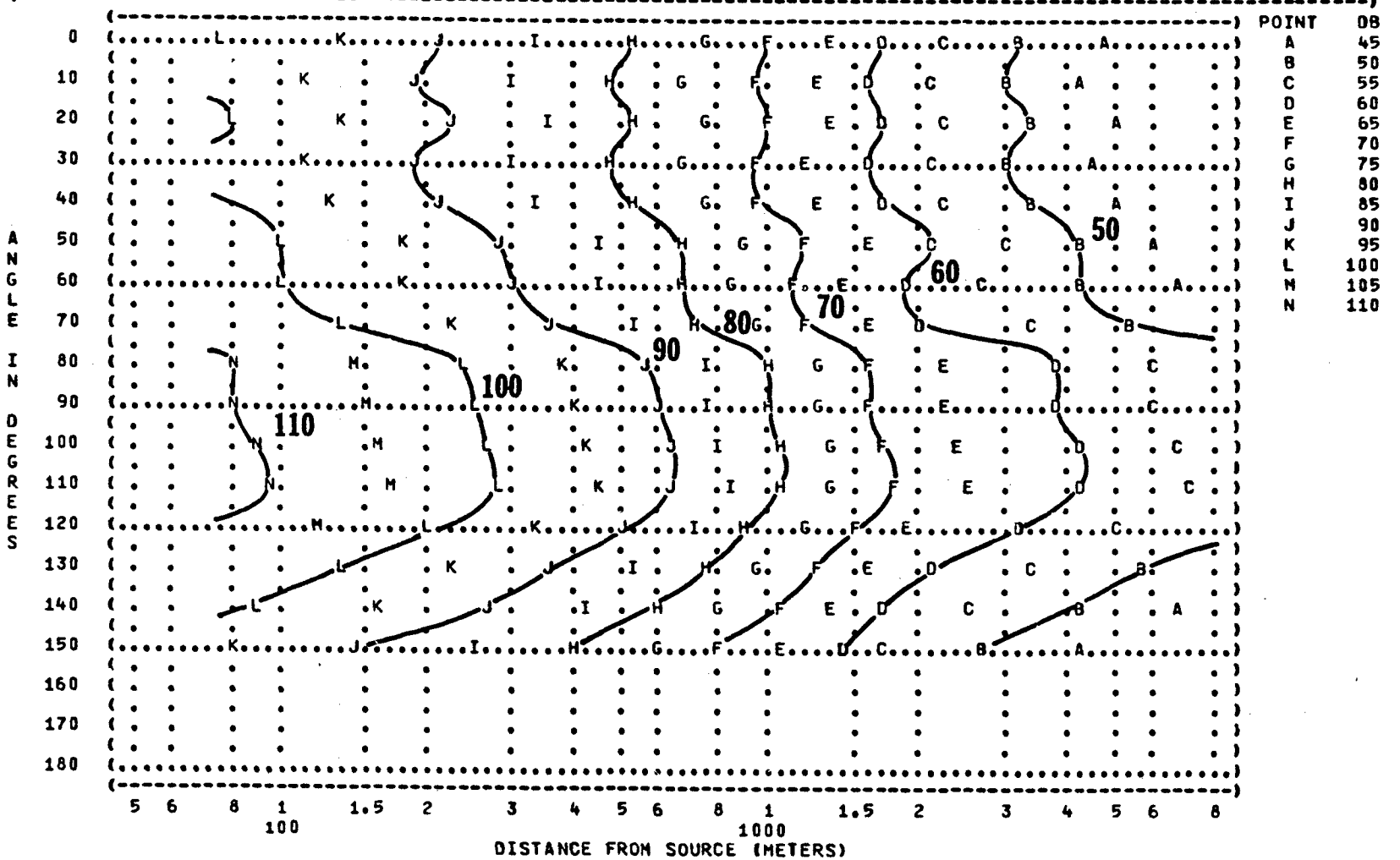
FIGURE: 5 OVERALL SOUND PRESSURE LEVEL (OASPL) EQUAL LEVEL CONTOURS (DB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 03
17 APR 75
PAGE 13

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
RUNUP POWER
9600 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %




| POINT | DB |
|---|---|
| A | 45 |
| B | 50 |
| C | 55 |
| D | 60 |
| E | 65 |
| F | 70 |
| G | 75 |
| H | 80 |
| I | 85 |
| J | 90 |
| K | 95 |
| L | 100 |
| M | 105 |
| N | 110 |

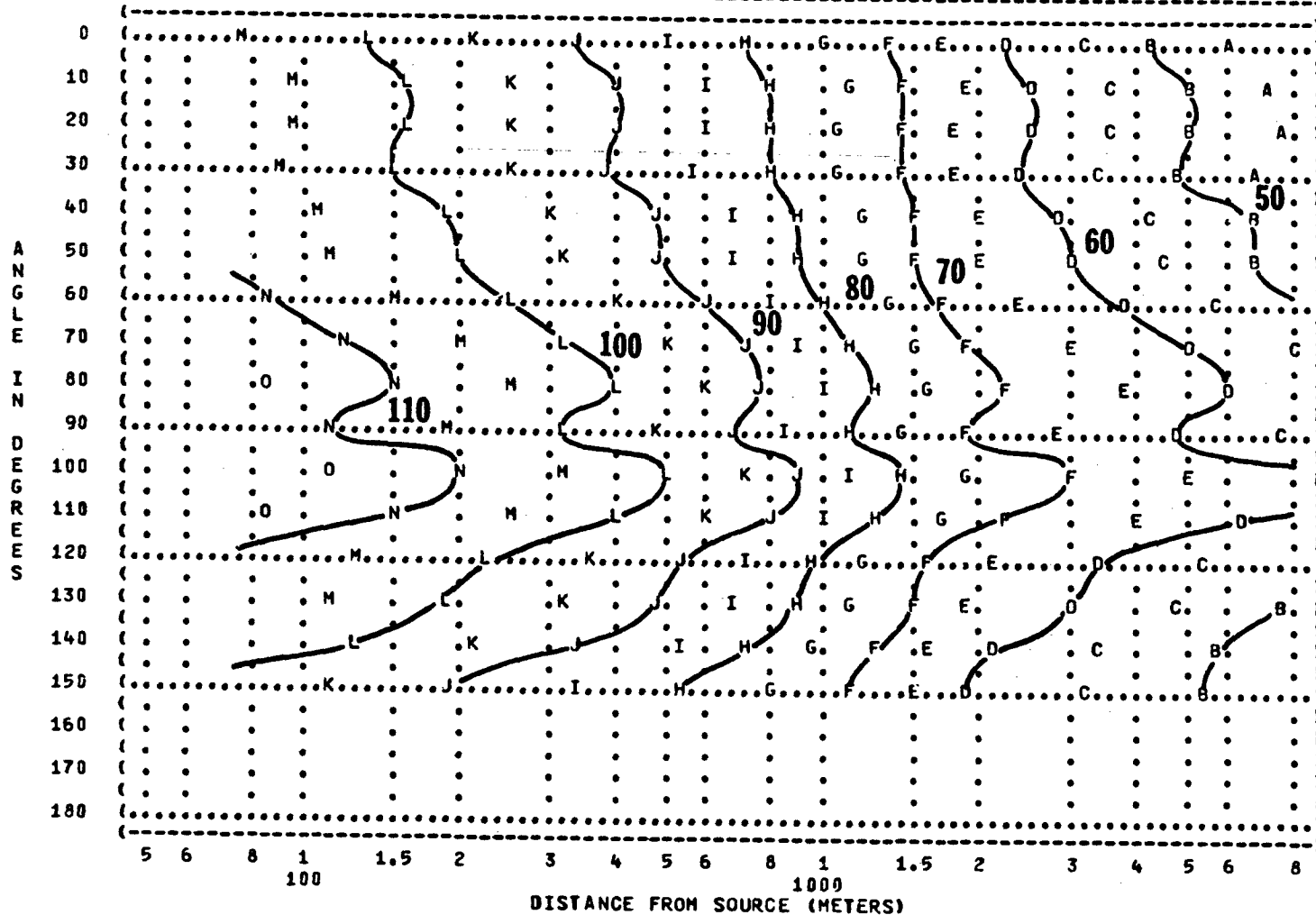
FIGURE 5 OVERALL SOUND PRESSURE LEVEL (OASPL) EQUAL LEVEL CONTOURS (DB)

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
16800 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-062-021
RUN 04
17 APR 75
PAGE 13




| POINT | DB |
|---|---|
| A | 45 |
| B | 50 |
| C | 55 |
| D | 60 |
| E | 65 |
| F | 70 |
| G | 75 |
| H | 80 |
| I | 85 |
| J | 90 |
| K | 95 |
| L | 100 |
| M | 105 |
| N | 110 |
| O | 115 |

FIGURE 6 C-WEIGHTED OVERALL SOUND LEVEL (OASLC)
EQUAL LEVEL CONTOURS (DBC)

OMEGA 1.4
TEST 75-002-021
RUN 01
17 APR 75
PAGE 14

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER, LOW SPEED
600 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

| POINT | DBC |
|---|---|
| A | 45 |
| B | 50 |
| C | 55 |
| D | 60 |
| E | 65 |
| F | 70 |
| G | 75 |
| H | 80 |
| I | 85 |
| J | 90 |
| K | 95 |

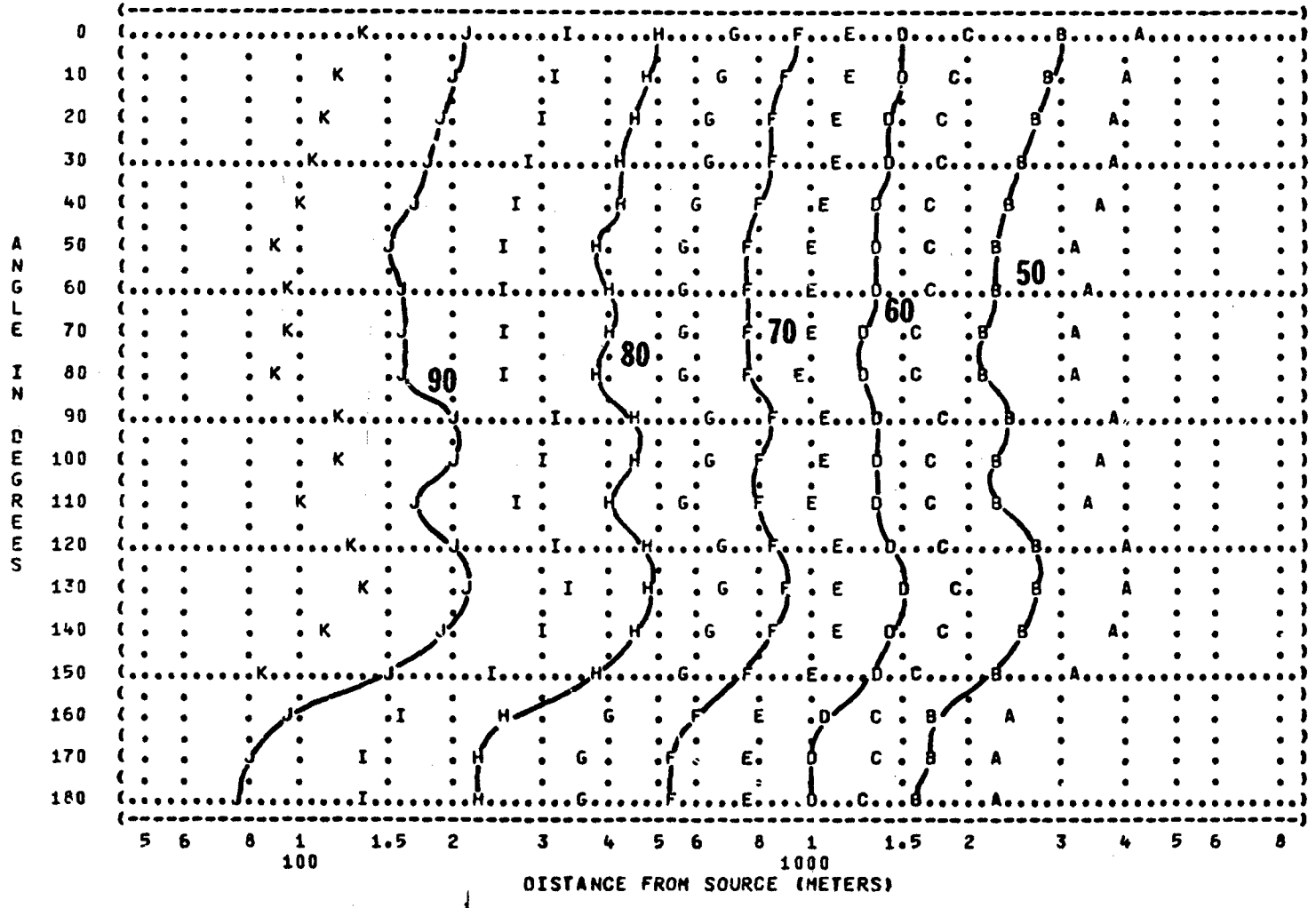


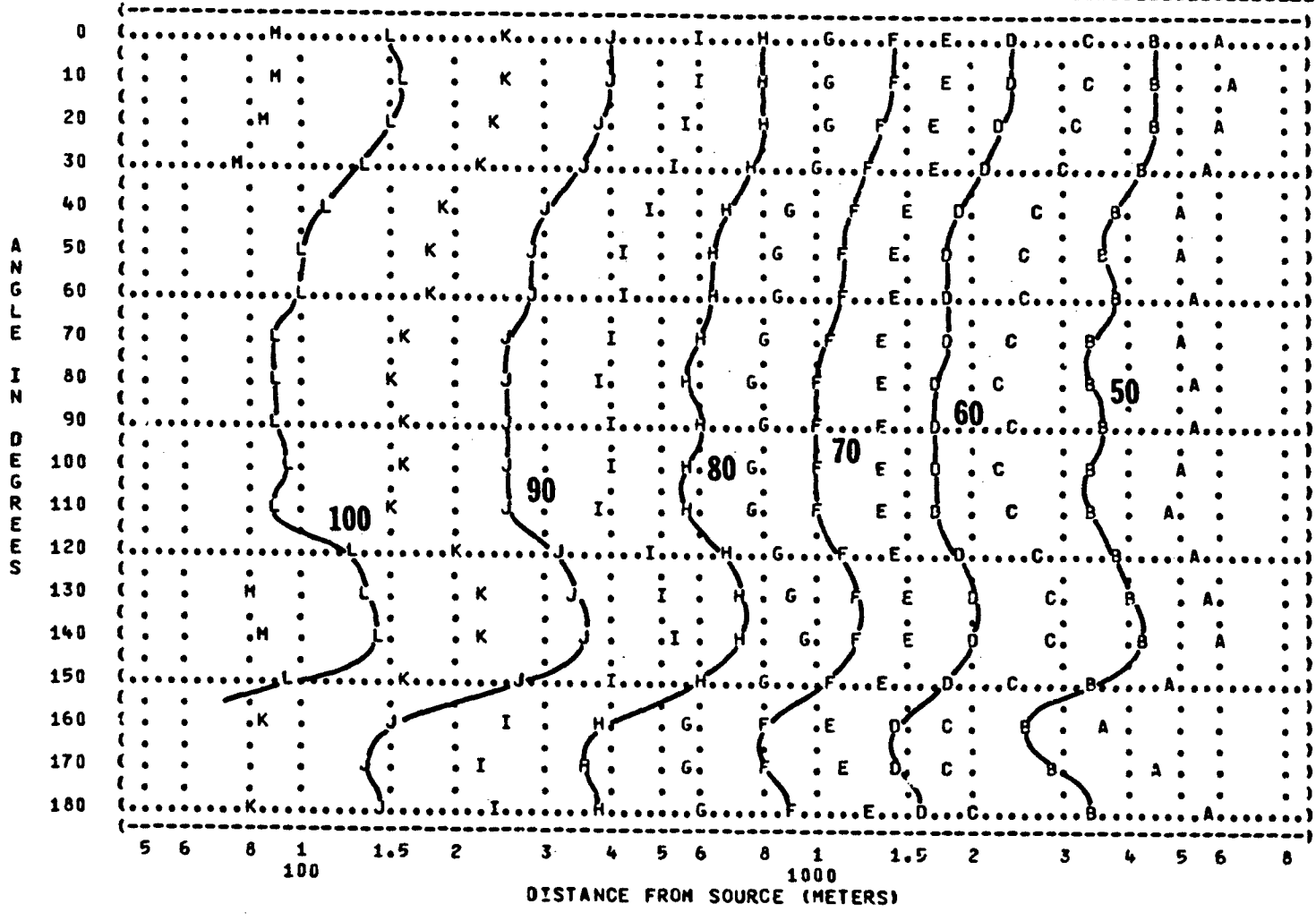
FIGURE 6 C-WEIGHTED OVERALL SOUND LEVEL (OASLC) EQUAL LEVEL CONTOURS (DBC)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 02
17 APR 75
PAGE 14

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER, NORMAL SPEED
1400 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %




| POINT | DBC |
|---|---|
| A | 45 |
| B | 50 |
| C | 55 |
| D | 60 |
| E | 65 |
| F | 70 |
| G | 75 |
| H | 80 |
| I | 85 |
| J | 90 |
| K | 95 |
| L | 100 |
| M | 105 |

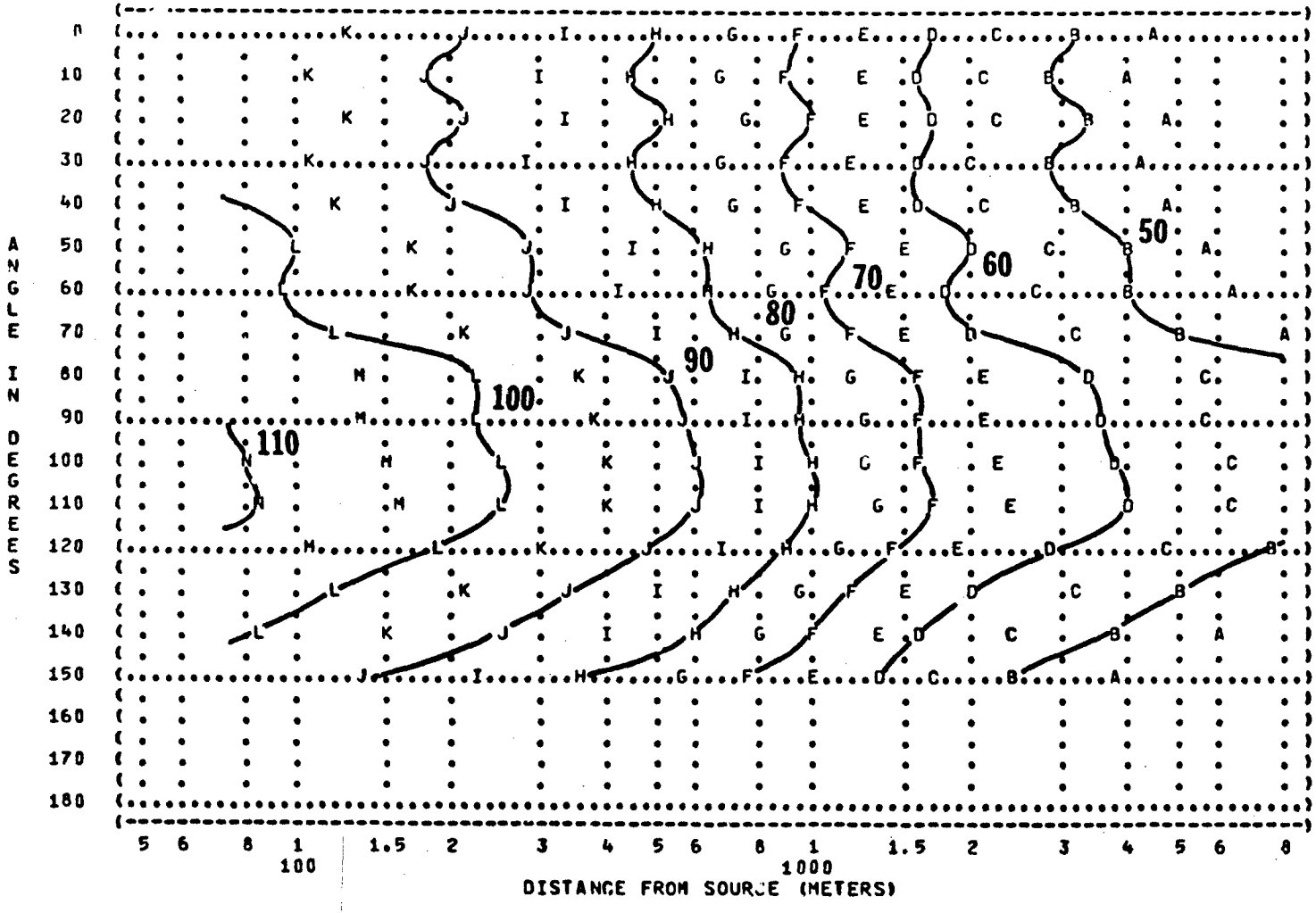
FIGURE 6 C-WEIGHTED OVERALL SOUND LEVEL (OASLC) EQUAL LEVEL CONTOURS (DBC)

OMEGA 1.4
TEST 75-002-021
RUN 03
17 APR 75
PAGE 14

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
RUNUP POWER
9600 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %




| POINT | DBC |
|---|---|
| A | 45 |
| B | 50 |
| C | 55 |
| D | 60 |
| E | 65 |
| F | 70 |
| G | 75 |
| H | 80 |
| I | 85 |
| J | 90 |
| K | 95 |
| L | 100 |
| M | 105 |
| N | 110 |

FIGURE 6: C-WEIGHTED OVERALL SOUND LEVEL (OASLC) EQUAL LEVEL CONTOURS (DBC)

IDENTIFICATION:

OMEGA 1.4
TEST 75-002-021
RUN 04

17 APR 75

PAGE 14

NOISE SOURCE/SUBJECT:

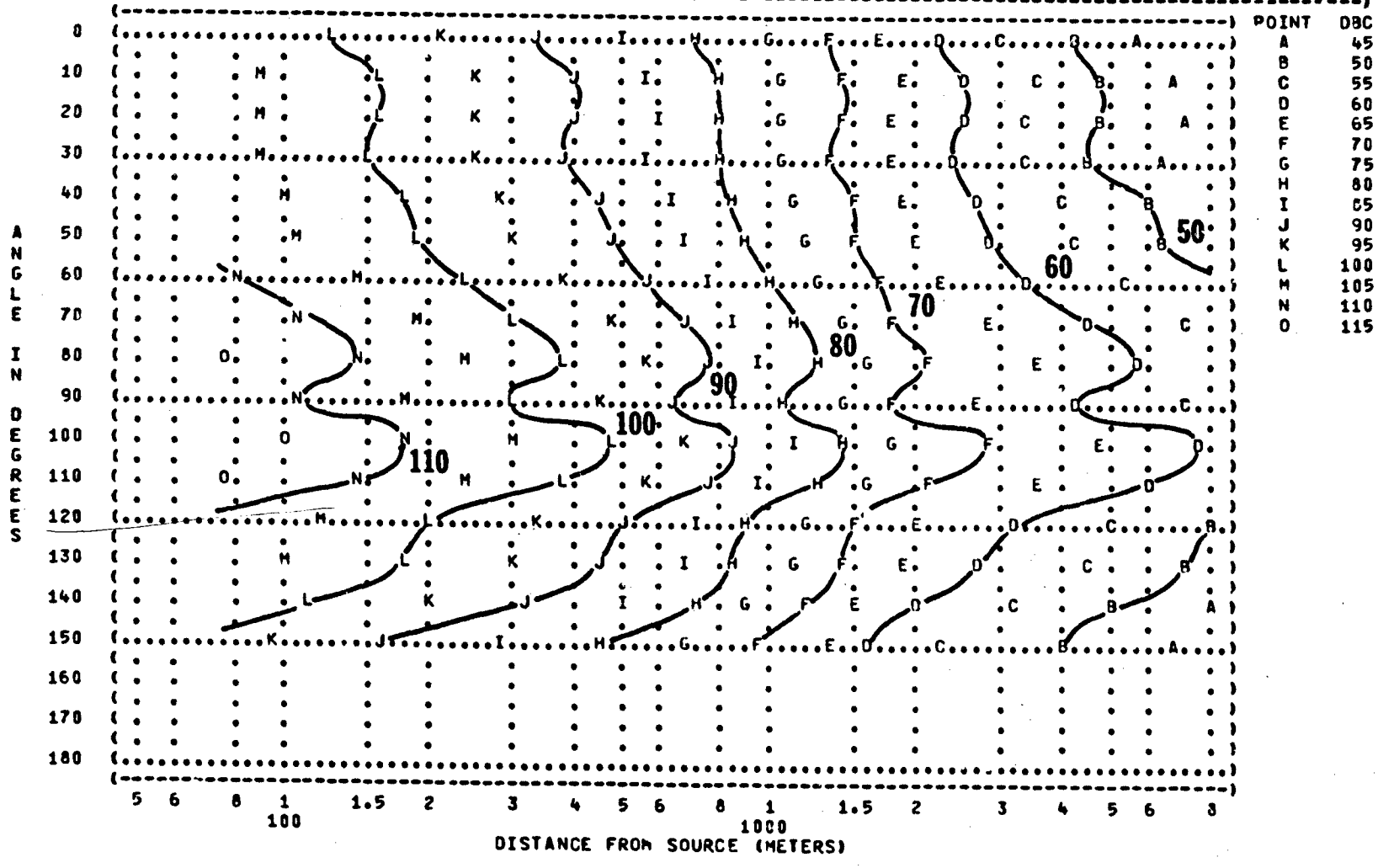
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:

MILITARY POWER
16800 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:

TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %




| POINT | DBC |
|---|---|
| A | 45 |
| B | 50 |
| C | 55 |
| D | 60 |
| E | 65 |
| F | 70 |
| G | 75 |
| H | 80 |
| I | 85 |
| J | 90 |
| K | 95 |
| L | 100 |
| M | 105 |
| N | 110 |
| O | 115 |

FIGURE 7 A-WEIGHTED OVERALL SOUND LEVEL (OASLA) EQUAL LEVEL CONTOURS (D3A)

IDENTIFICATION

OMEGA 1.4
TEST 75-002-021
RUN 01

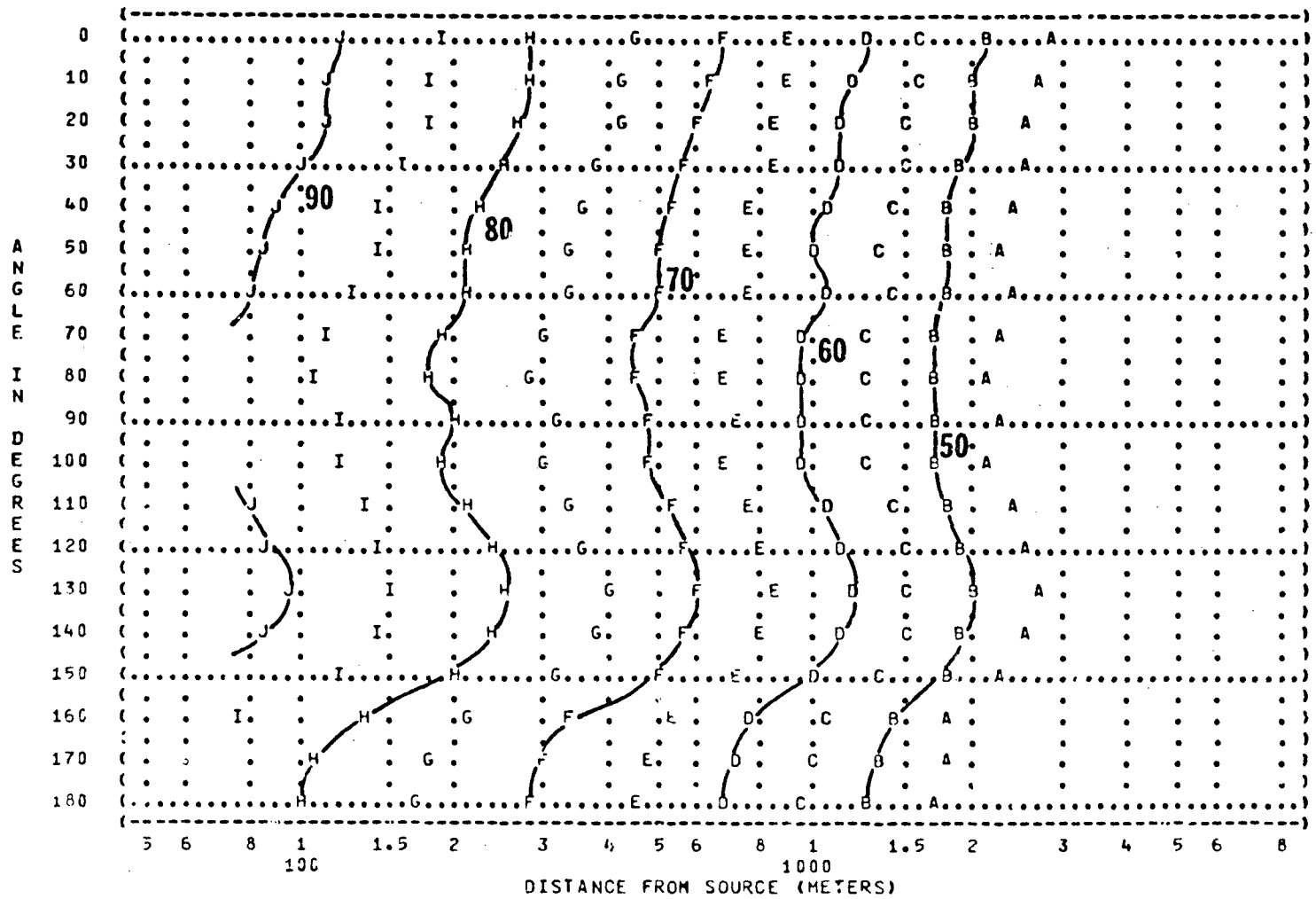
17 APR 75

PAGE 15

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER, LOW SPEED
800 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %




| POINT | OBA |
|---|---|
| A | 45 |
| B | 50 |
| C | 55 |
| D | 60 |
| E | 65 |
| F | 70 |
| G | 75 |
| H | 80 |
| I | 85 |
| J | 90 |

FIGURE 7 A-WEIGHTED OVERALL SOUND LEVEL (OASLA) EQUAL LEVEL CONTOURS (DBA)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 02
17 APR 75
PAGE 15

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER, NORMAL SPEED
1400 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

| POINT | DBA |
|---|---|
| A | 45 |
| B | 50 |
| C | 55 |
| D | 60 |
| E | 65 |
| F | 70 |
| G | 75 |
| H | 80 |
| I | 85 |
| J | 90 |
| K | 95 |
| L | 100 |

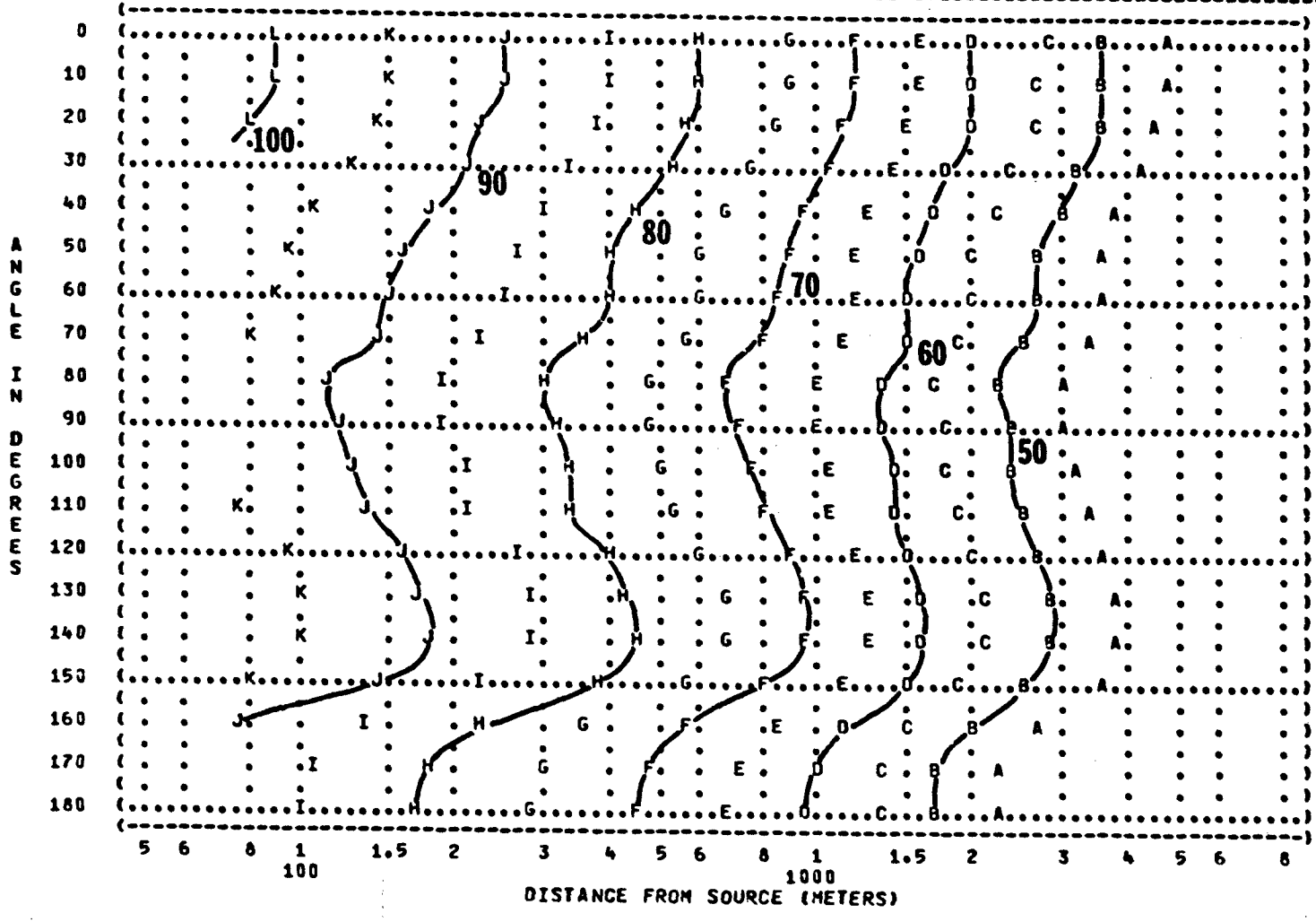


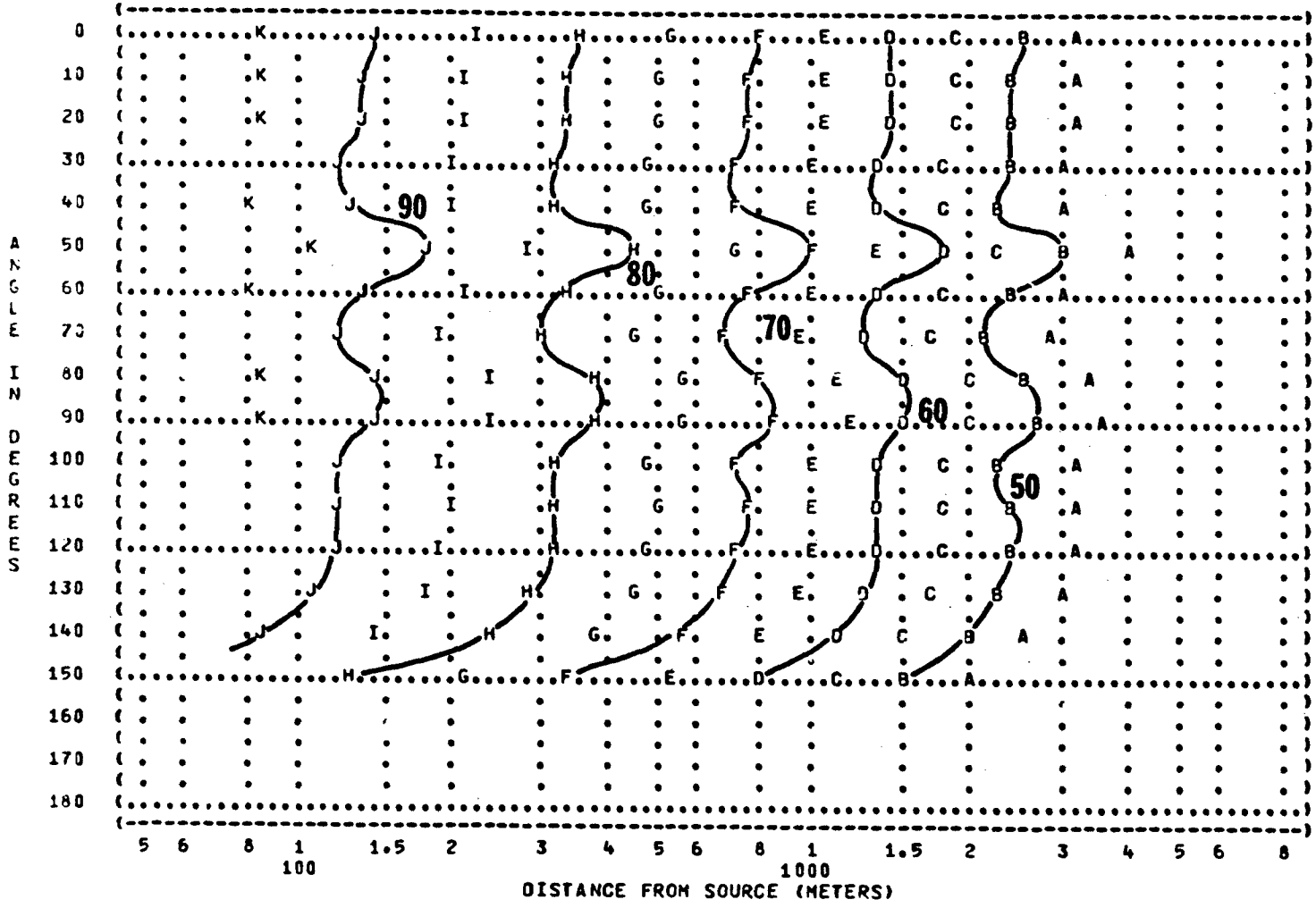
FIGURE 7 A-WEIGHTED OVERALL SOUND LEVEL (OASLA) EQUAL LEVEL CONTOURS (DBA)

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
RUNUP POWER
9600 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 03
17 APR 75
PAGE 15




| POINT | DBA |
|---|---|
| A | 45 |
| B | 50 |
| C | 55 |
| D | 60 |
| E | 65 |
| F | 70 |
| G | 75 |
| H | 80 |
| I | 85 |
| J | 90 |
| K | 95 |

FIGURE 7 A-WEIGHTED OVERALL SOUND LEVEL (OASLA) EQUAL LEVEL CONTOURS (DBA)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 04
17 APR 75
PAGE 15

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
16800 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

| POINT | DBA |
|---|---|
| A | 45 |
| B | 50 |
| C | 55 |
| D | 60 |
| E | 65 |
| F | 70 |
| G | 75 |
| H | 80 |
| I | 85 |
| J | 90 |
| K | 95 |
| L | 100 |

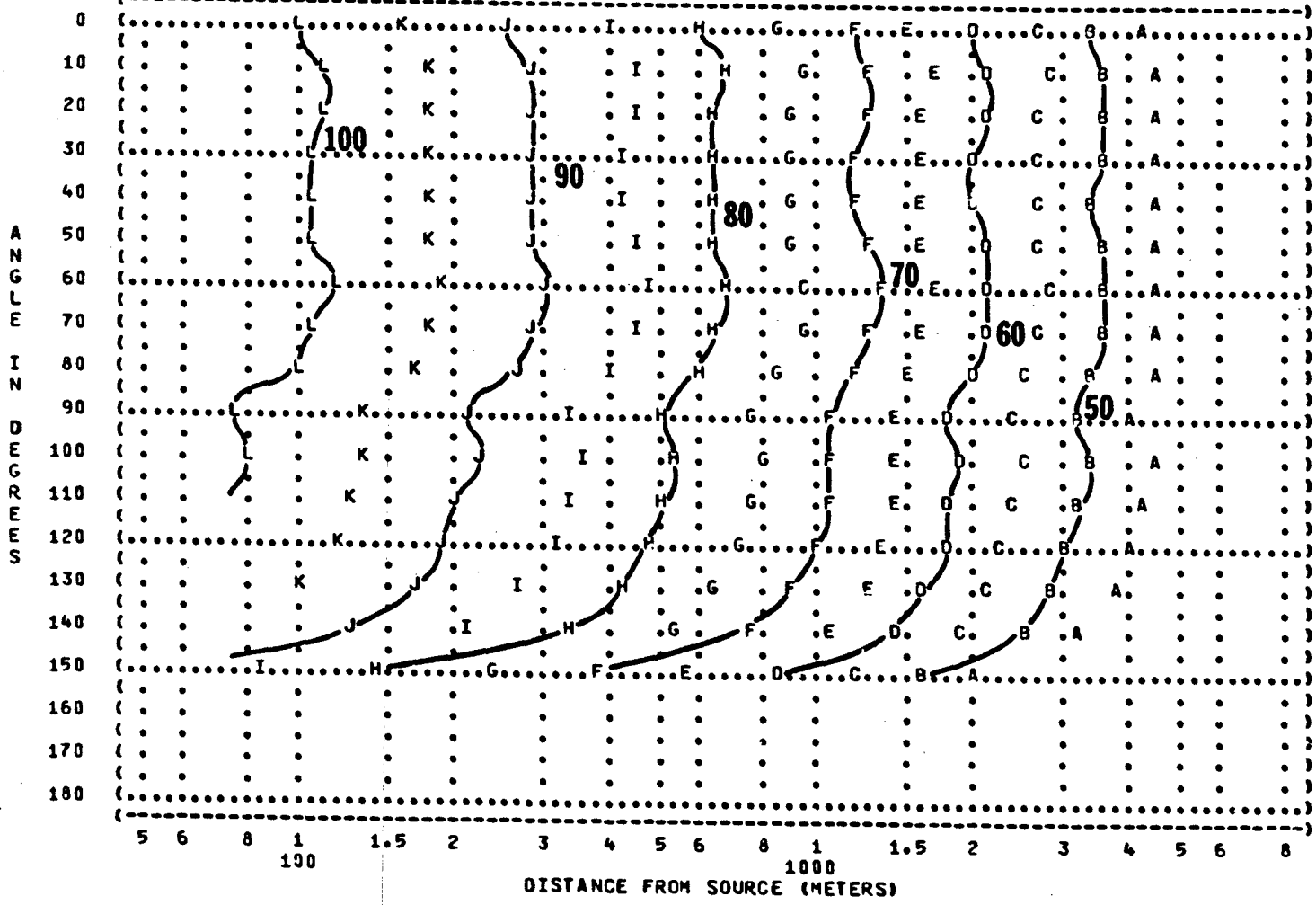


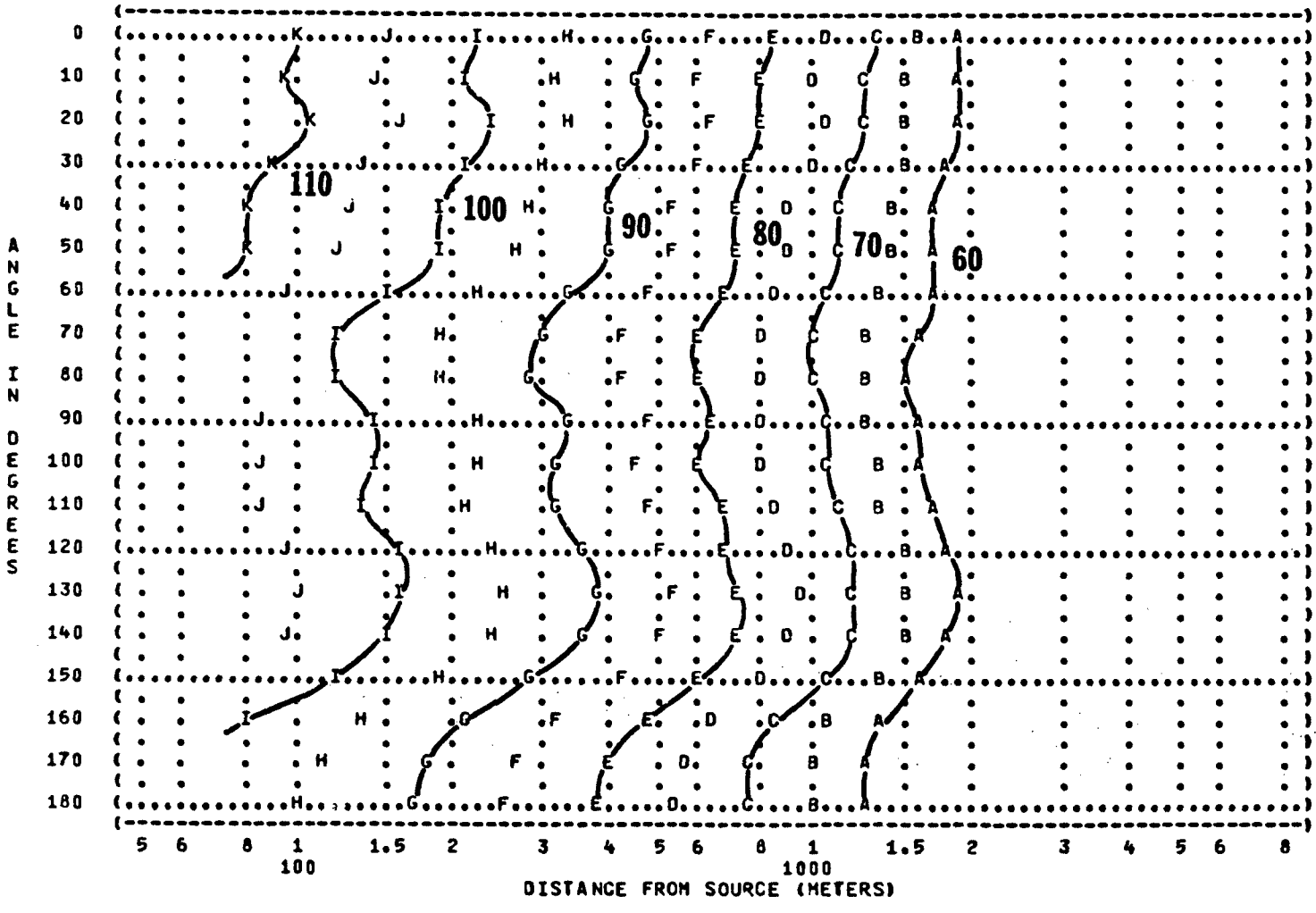
FIGURE 8 PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION (PNLT) EQUAL LEVEL CONTOURS (PNDB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 01
17 APR 75
PAGE 16

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER, LOW SPEED
800 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %




| POINT | PNDB |
|---|---|
| A | 60 |
| B | 65 |
| C | 70 |
| D | 75 |
| E | 80 |
| F | 85 |
| G | 90 |
| H | 95 |
| I | 100 |
| J | 105 |
| K | 110 |

FIGURE 8 PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION (PNLT) EQUAL LEVEL CONTOURS (PNDB)

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER, NORMAL SPEED
1400 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 02
17 APR 75
PAGE 16

| POINT | PNDB |
|---|---|
| A | 60 |
| B | 65 |
| C | 70 |
| D | 75 |
| E | 80 |
| F | 85 |
| G | 90 |
| H | 95 |
| I | 100 |
| J | 105 |
| K | 110 |
| L | 115 |

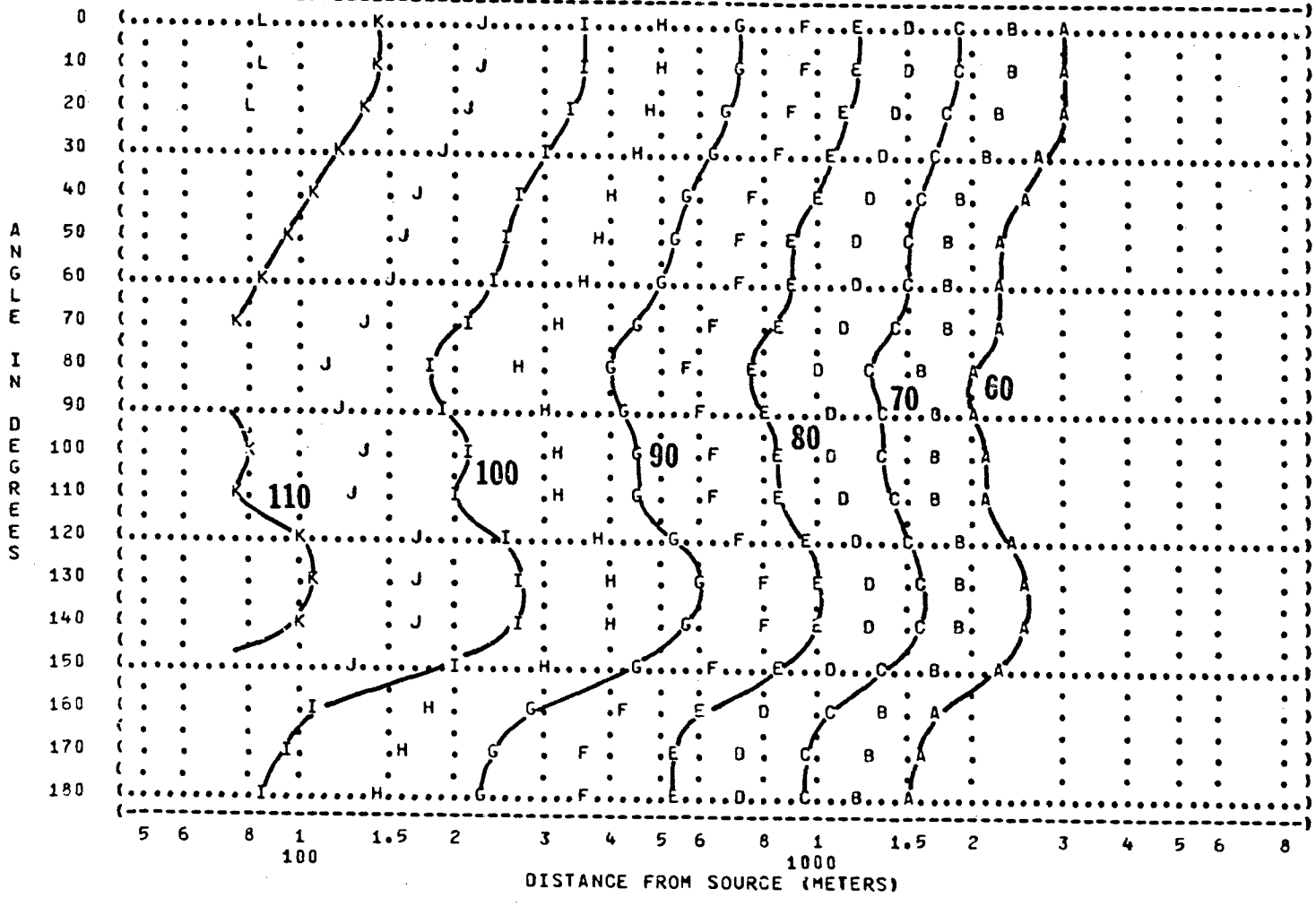


FIGURE 8 PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION (PNLT)
EQUAL LEVEL CONTOURS (PNDB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 03
17 APR 75
PAGE 16

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
RUNUP POWER
9600 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

| POINT | PNDB |
|---|---|
| A | 60 |
| B | 65 |
| C | 70 |
| D | 75 |
| E | 80 |
| F | 85 |
| G | 90 |
| H | 95 |
| I | 100 |
| J | 105 |
| K | 110 |

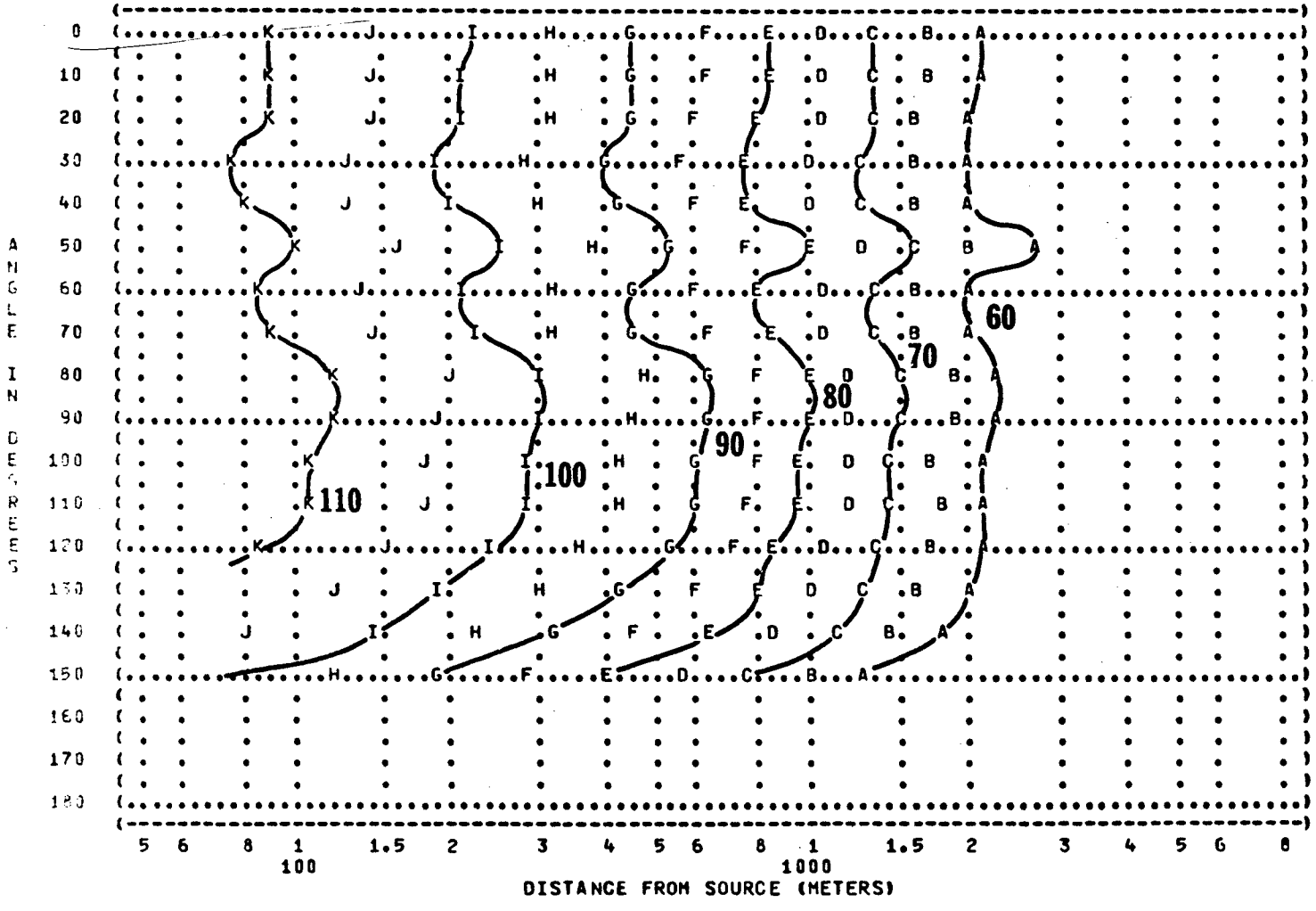


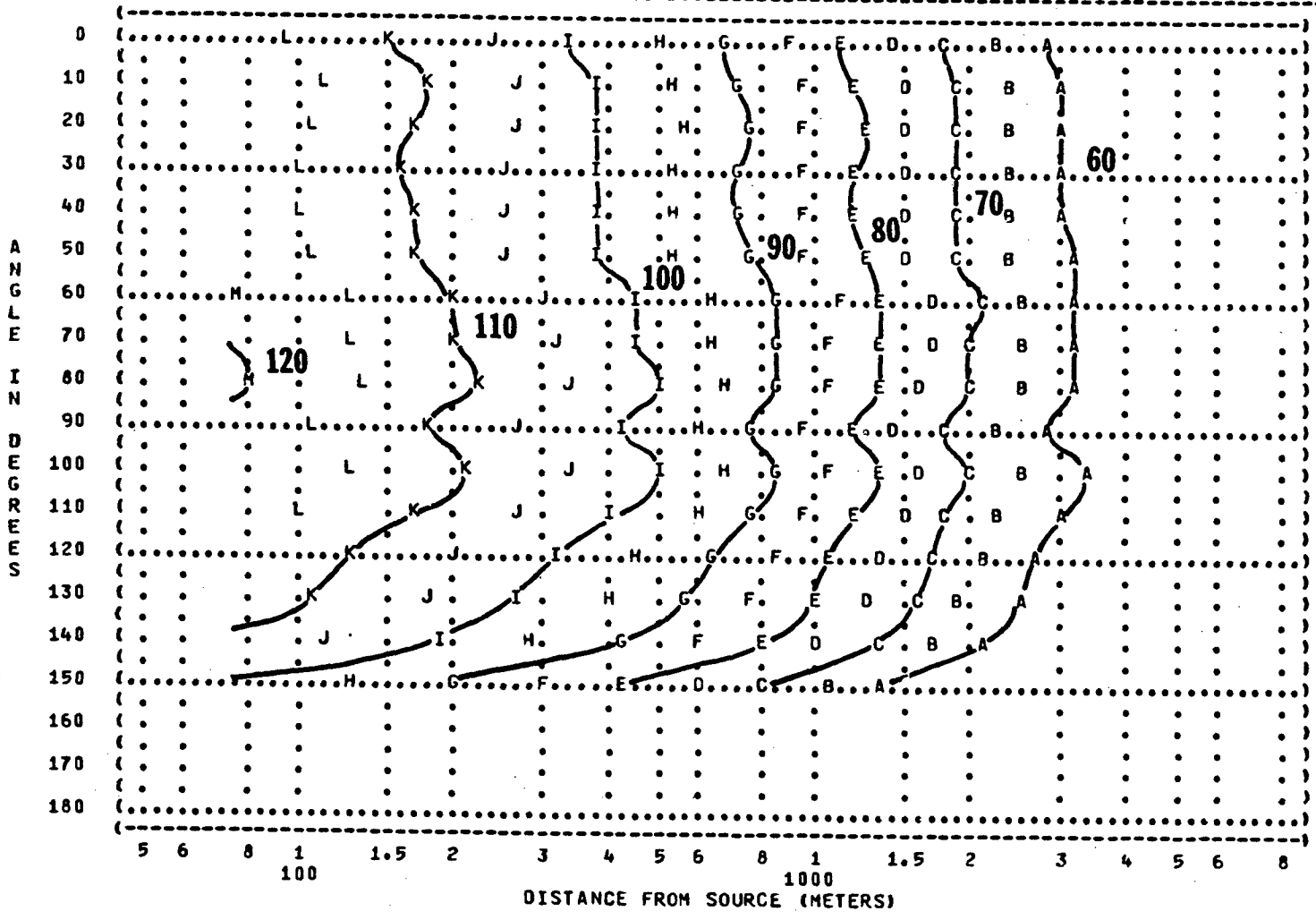
FIGURE 8 PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION (PNLT) EQUAL LEVEL CONTOURS (PNDB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 04
17 APR 75
PAGE 16

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
16800 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %




| POINT | PNDB |
|---|---|
| A | 60 |
| B | 65 |
| C | 70 |
| D | 75 |
| E | 80 |
| F | 85 |
| G | 90 |
| H | 95 |
| I | 100 |
| J | 105 |
| K | 110 |
| L | 115 |
| M | 120 |

FIGURE 9 PREFERRED SPEECH INTERFERENCE LEVEL (PSIL) EQUAL LEVEL CONTOURS (DB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-802-021
RUN 01
17 APR 75
PAGE 17

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER, LOW SPEED
800 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |

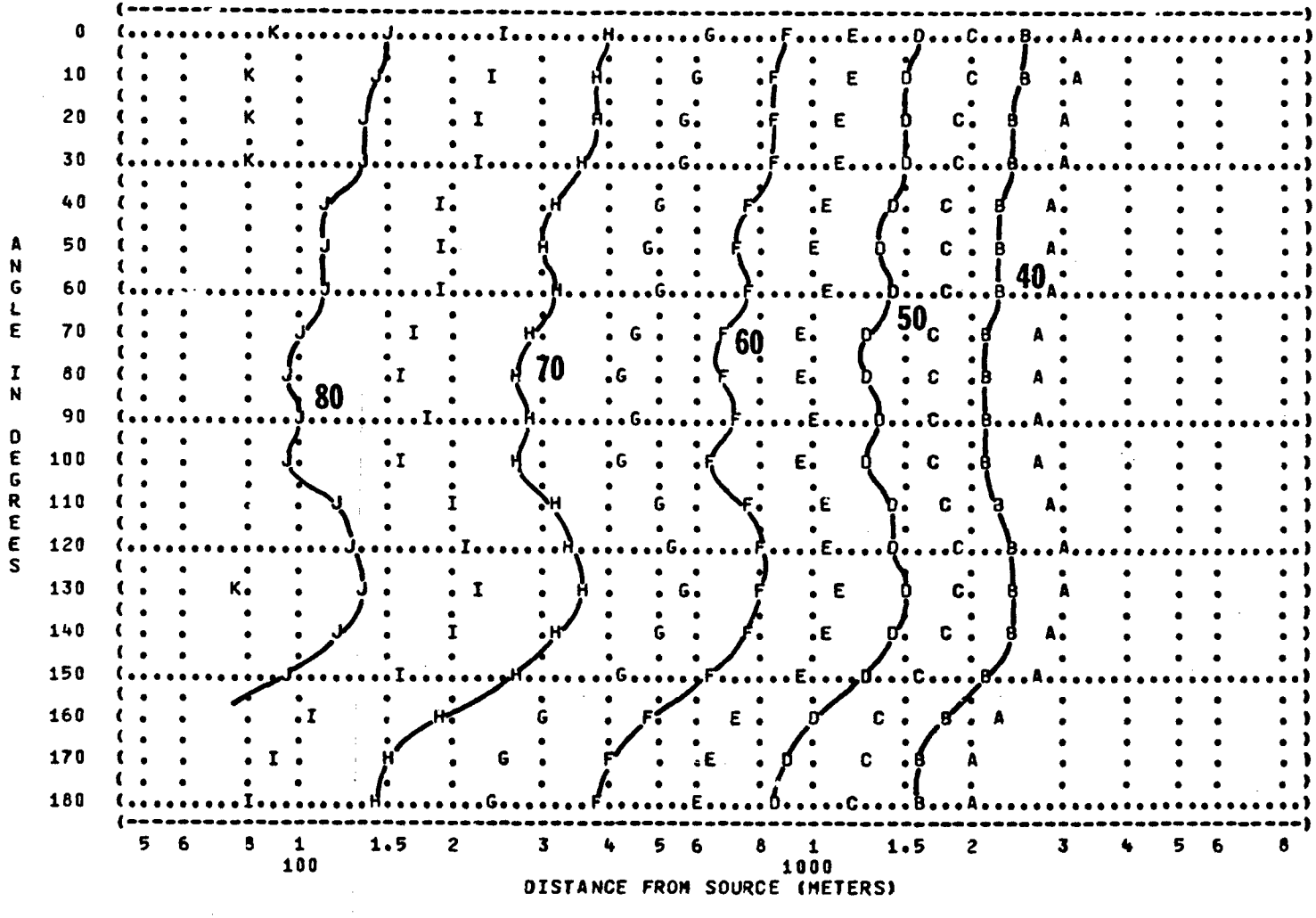


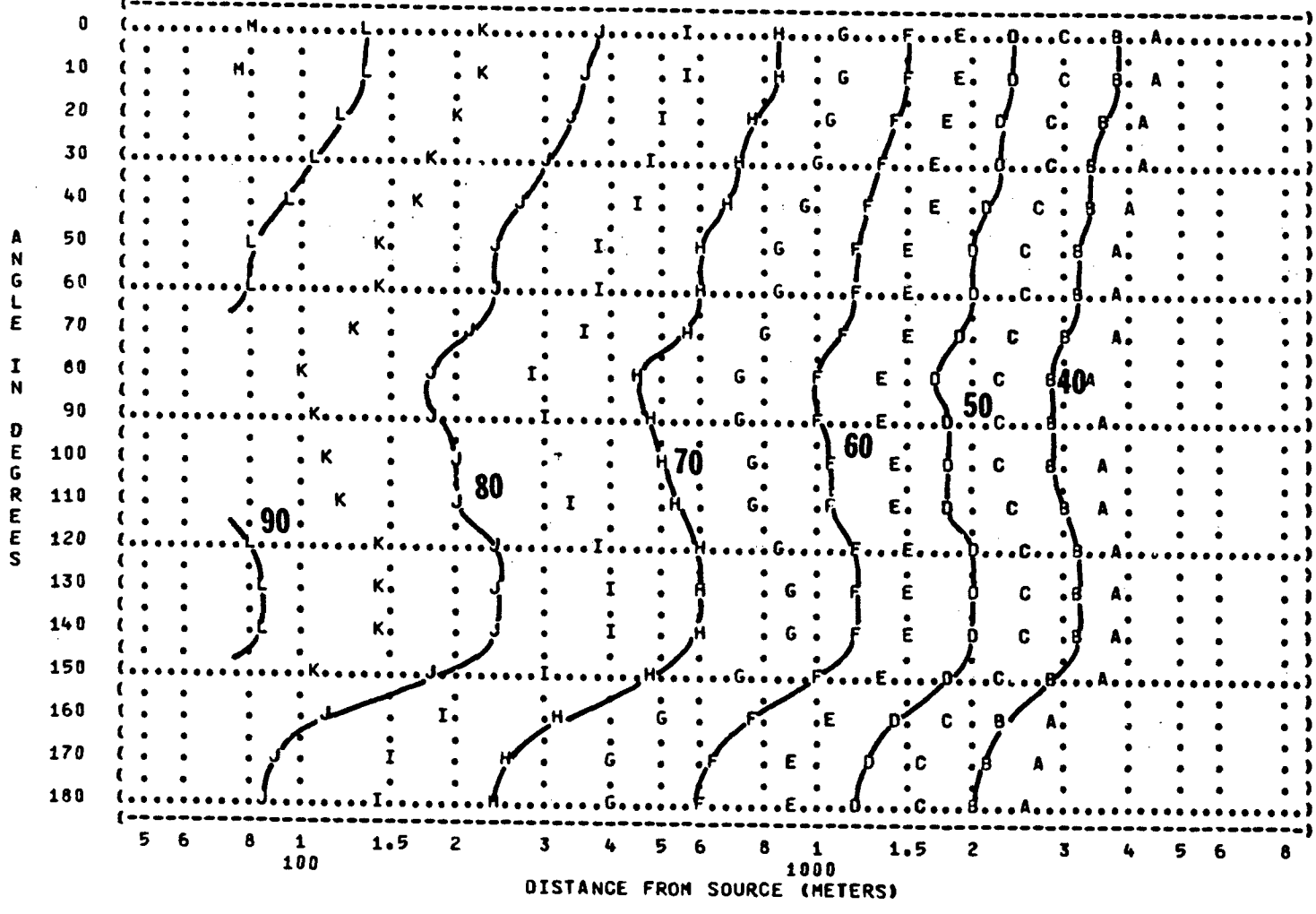
FIGURE 9 PREFERRED SPEECH INTERFERENCE LEVEL (PSIL) EQUAL LEVEL CONTOURS (DB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 02
17 APR 75
PAGE 17

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER, NORMAL SPEED
1400 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %




| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |
| L | 90 |
| M | 95 |

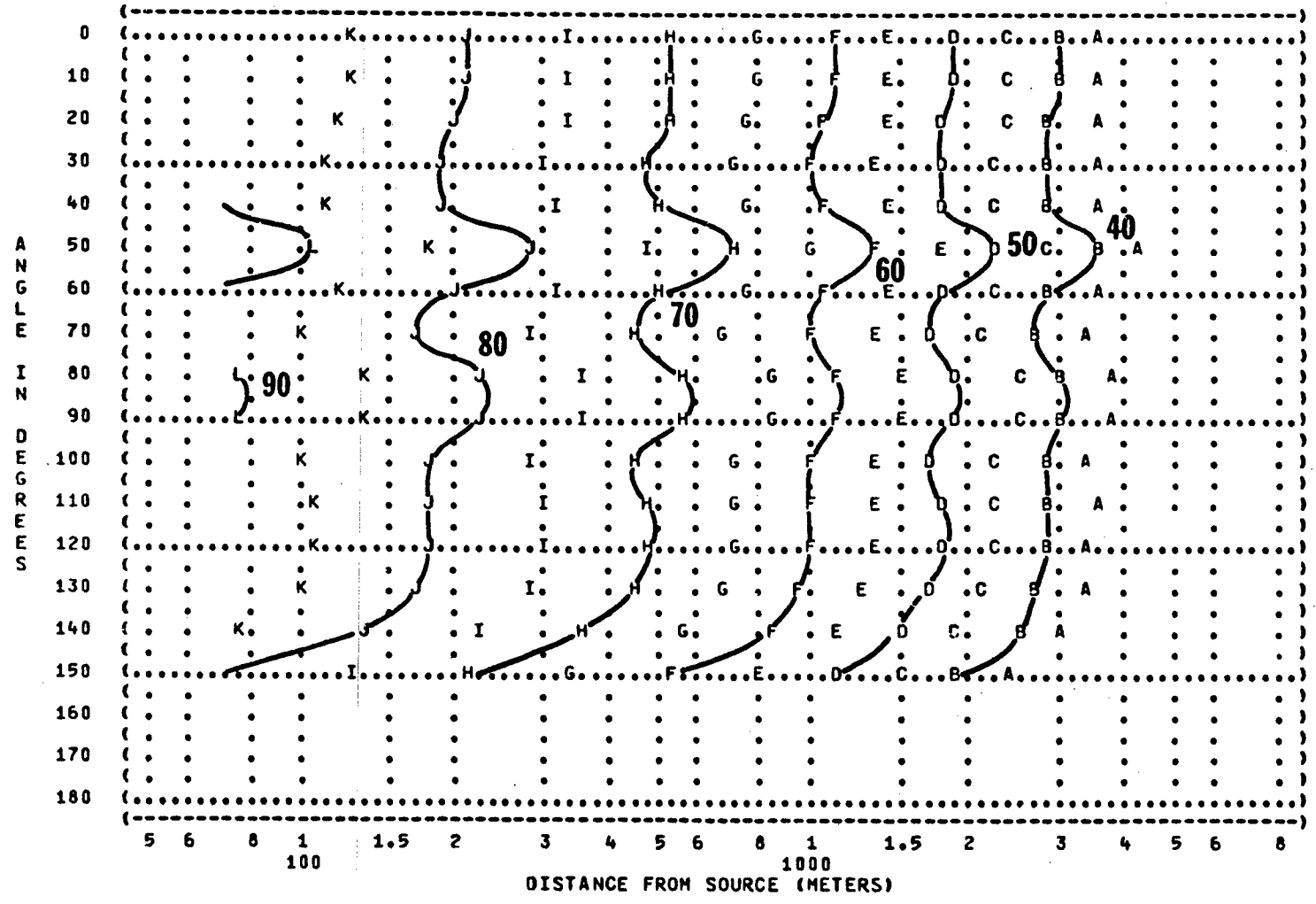
FIGURE 9 PREFERRED SPEECH INTERFERENCE LEVEL (PSIL) EQUAL LEVEL CONTOURS (DB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 03
17 APR 75
PAGE 17

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
RUNUP POWER
9600 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %




| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |
| L | 90 |

FIGURE 9 PREFERRED SPEECH INTERFERENCE LEVEL (PSIL) EQUAL LEVEL CONTOURS (DB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 04
17 APR 75
PAGE 17

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
16800 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |
| L | 90 |
| M | 95 |

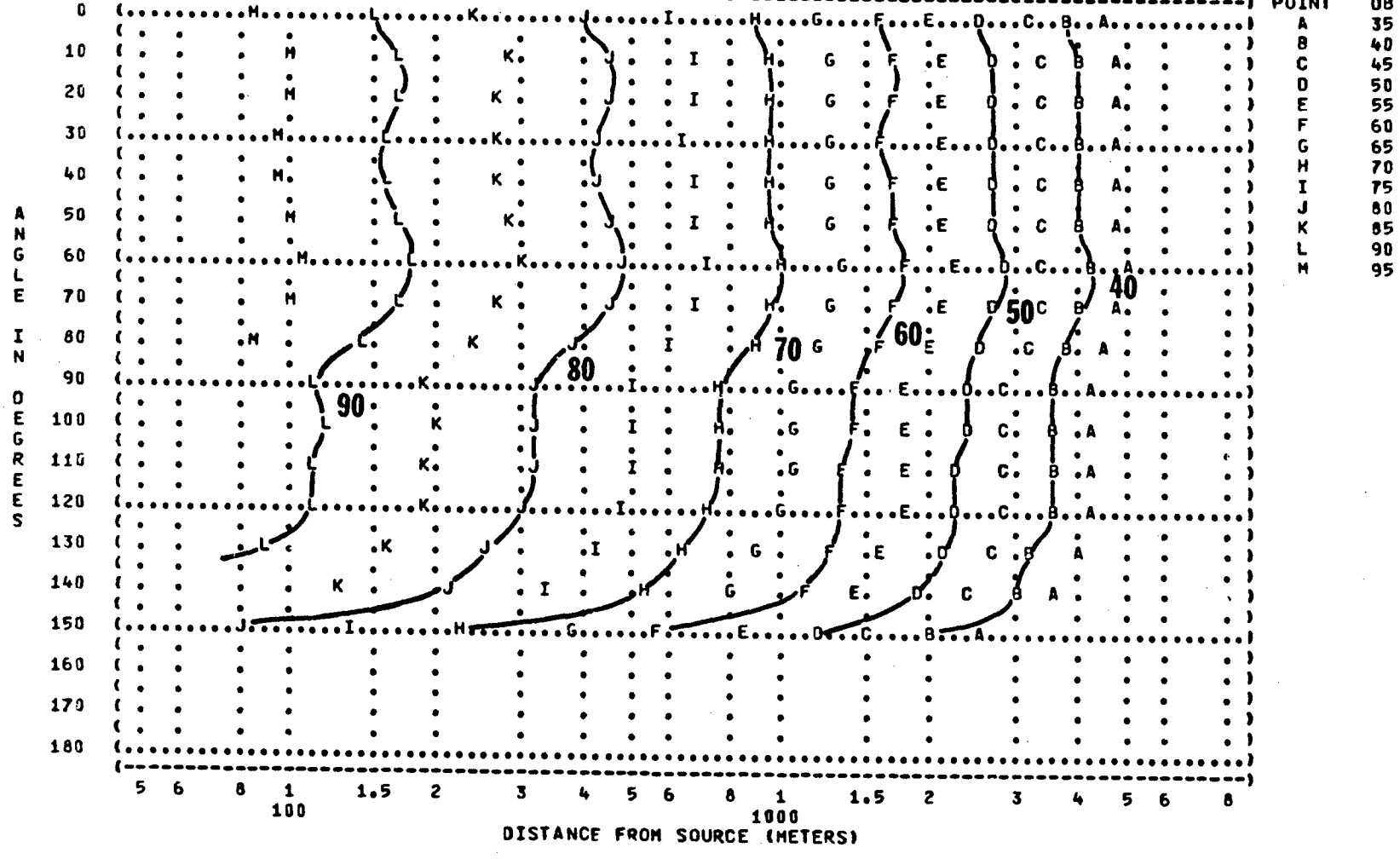


FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
NO PROTECTION

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 01
17 APR 75
PAGE 7

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER, LOW SPEED
800 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

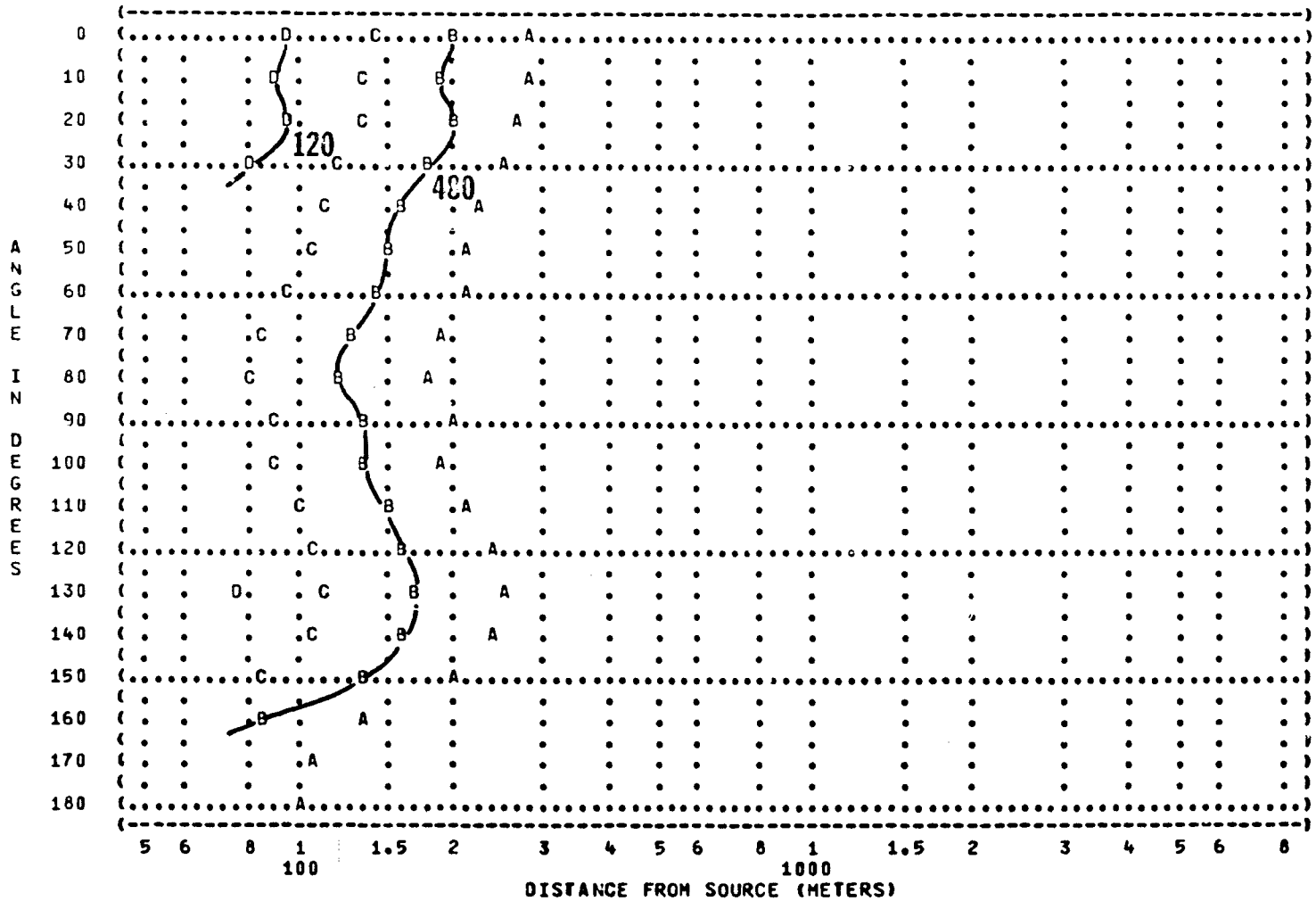


FIGURE 10 MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 01
17 APR 75
PAGE 8

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER, LOW SPEED
800 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

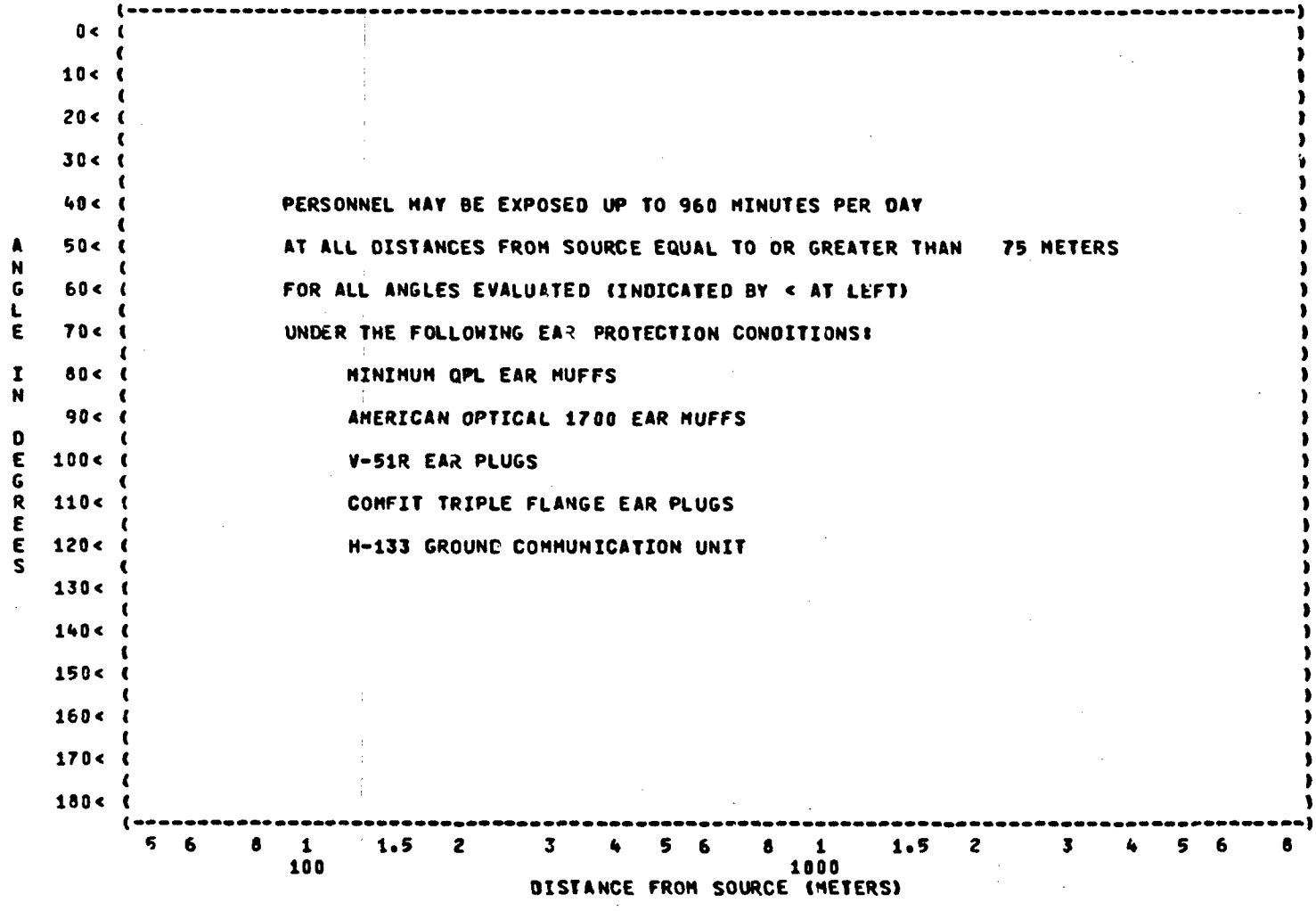


FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
NO PROTECTION

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER, NORMAL SPEED
1400 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 02

17 APR 75

PAGE 7

| POINT | MIN |
|---|---|
| A | 960 |
| B | 480 |
| C | 240 |
| D | 120 |
| E | 60 |
| F | 30 |

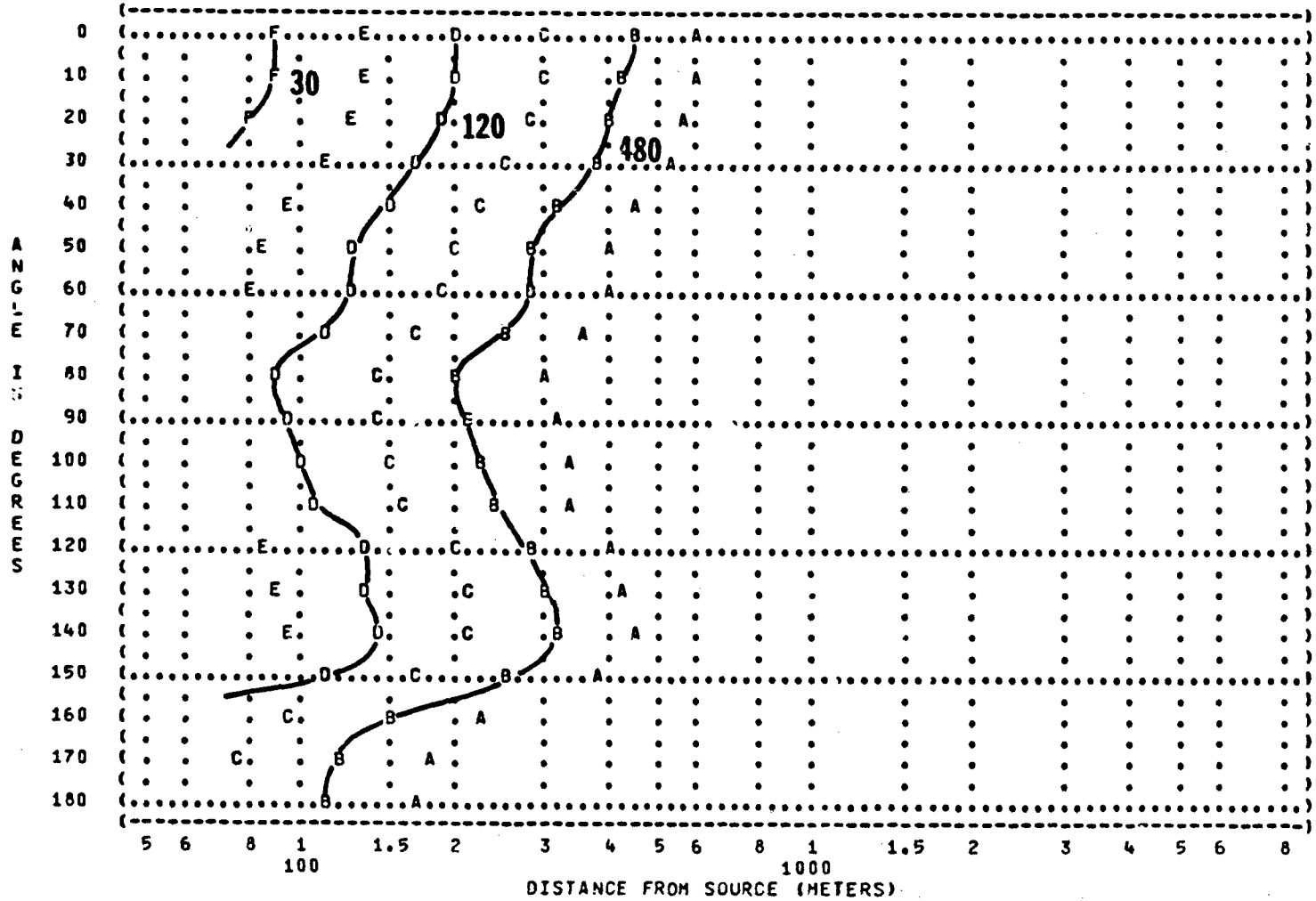


FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
MINIMUM OPL EAR MUFFS

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER, NORMAL SPEED
1400 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 02
17 APR 75
PAGE 8

| POINT | MIN |
|---|---|
| A | 960 |

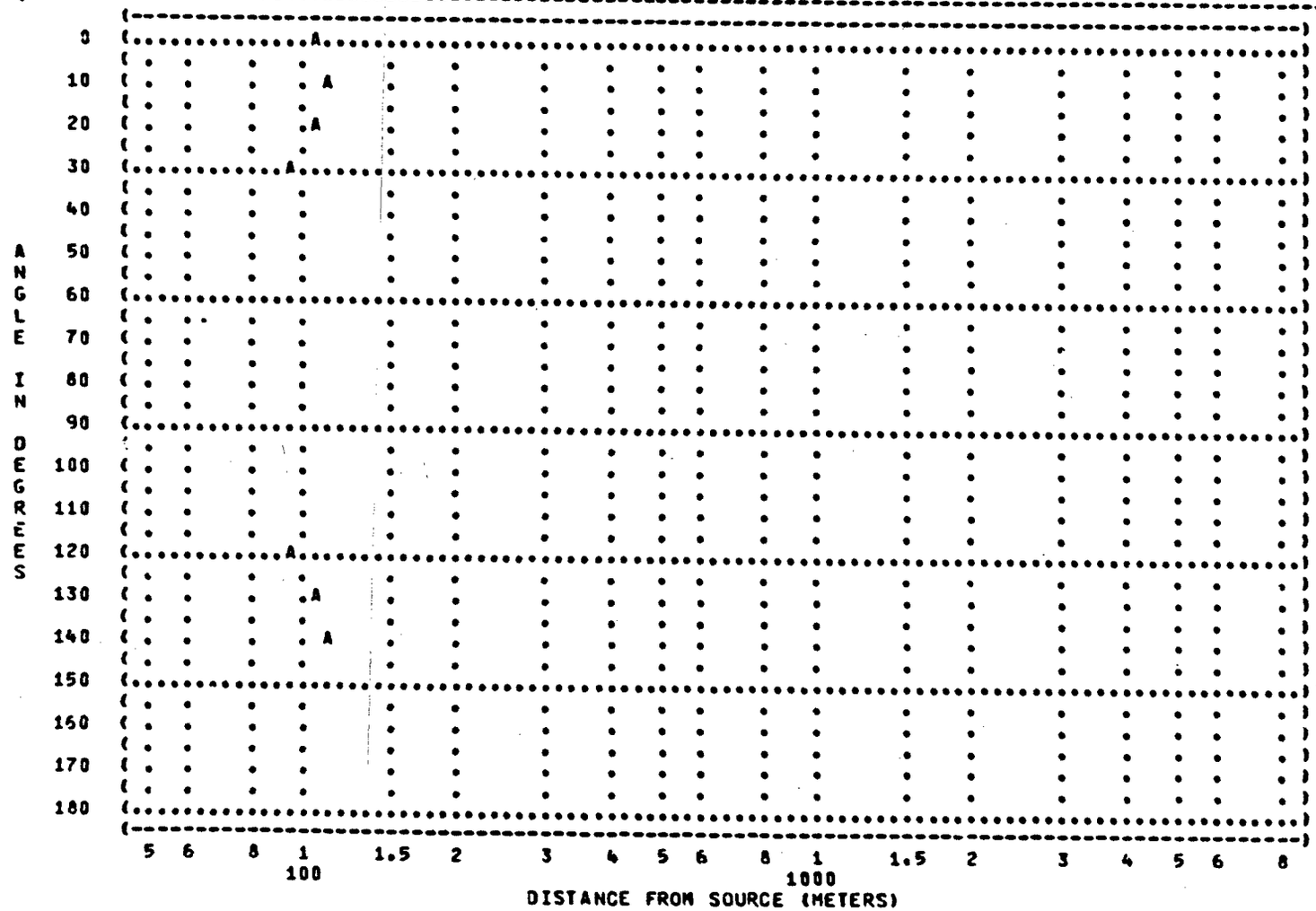


FIGURE 10 MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
COMFIT TRIPLE FLANGE EAR PLUGS

IDENTIFICATION:
OMEGA 1.4
TEST 75-802-021
RUN 02

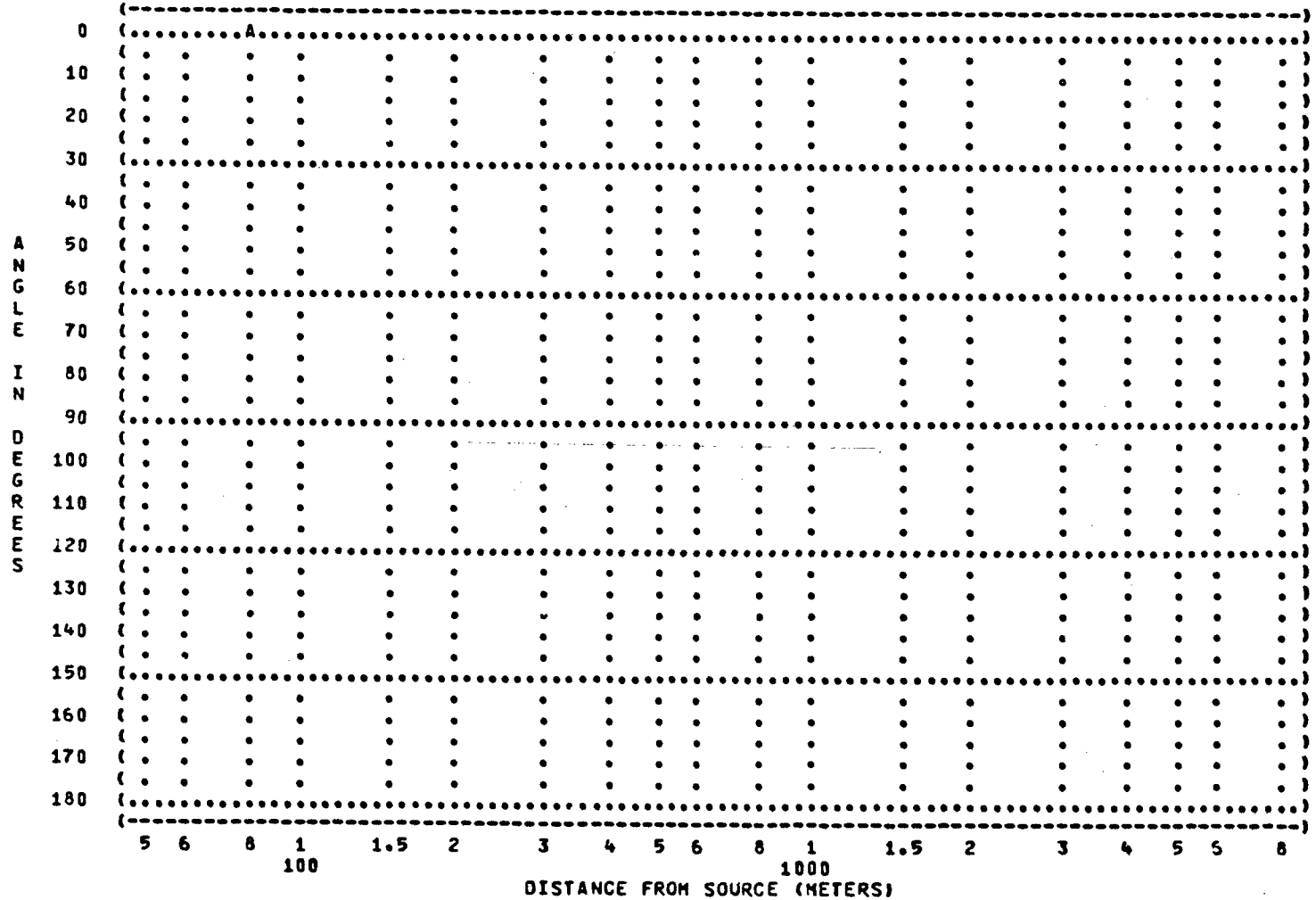
17 APR 75

PAGE 9

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER, NORMAL SPEED
1400 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %




POINT A MIN 960

FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)

IDENTIFICATION:
OMEGA 1.4
TEST 75-302-021
RUN 02

17 APR 75

PAGE 10

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER, NORMAL SPEED
1400 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

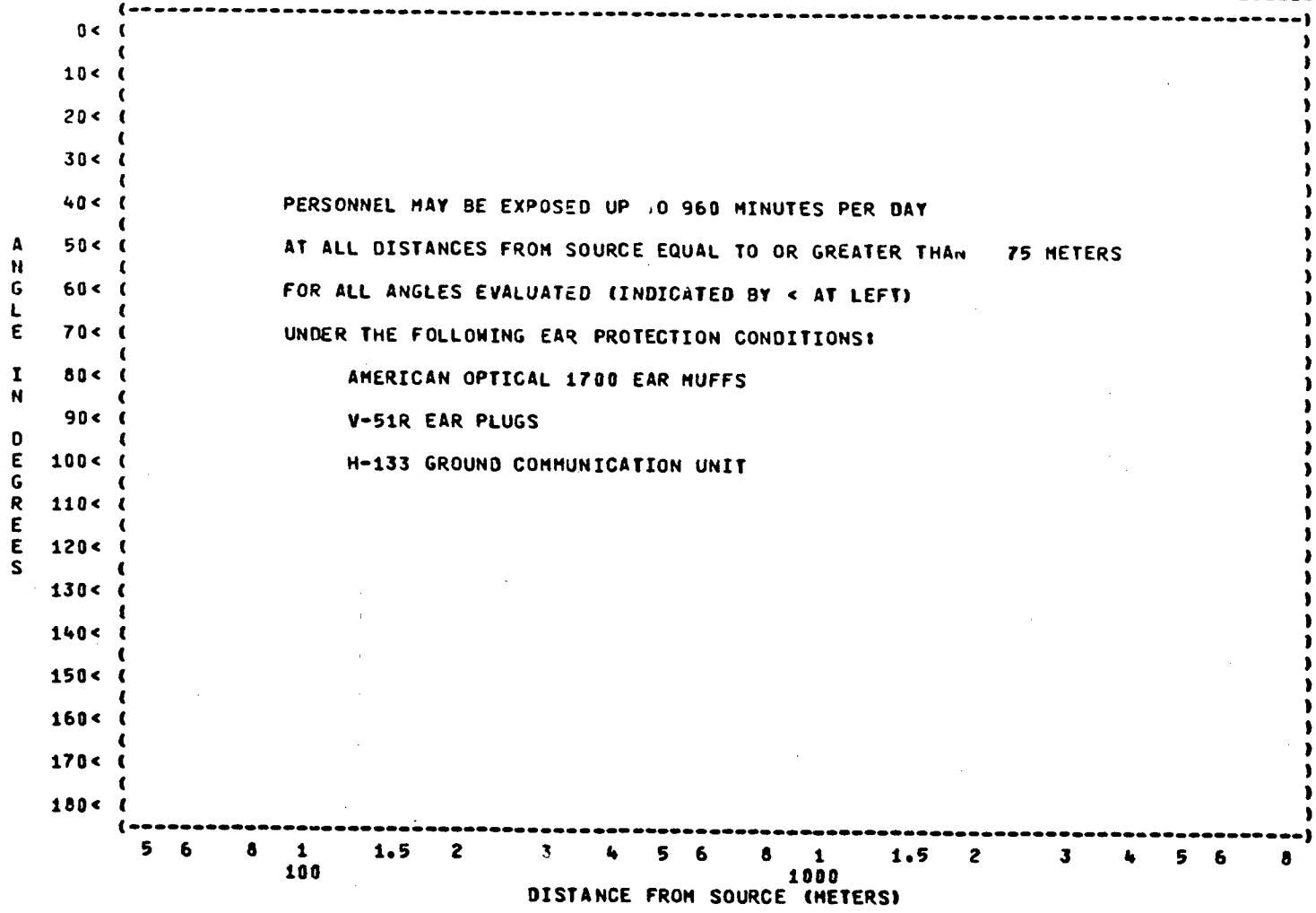


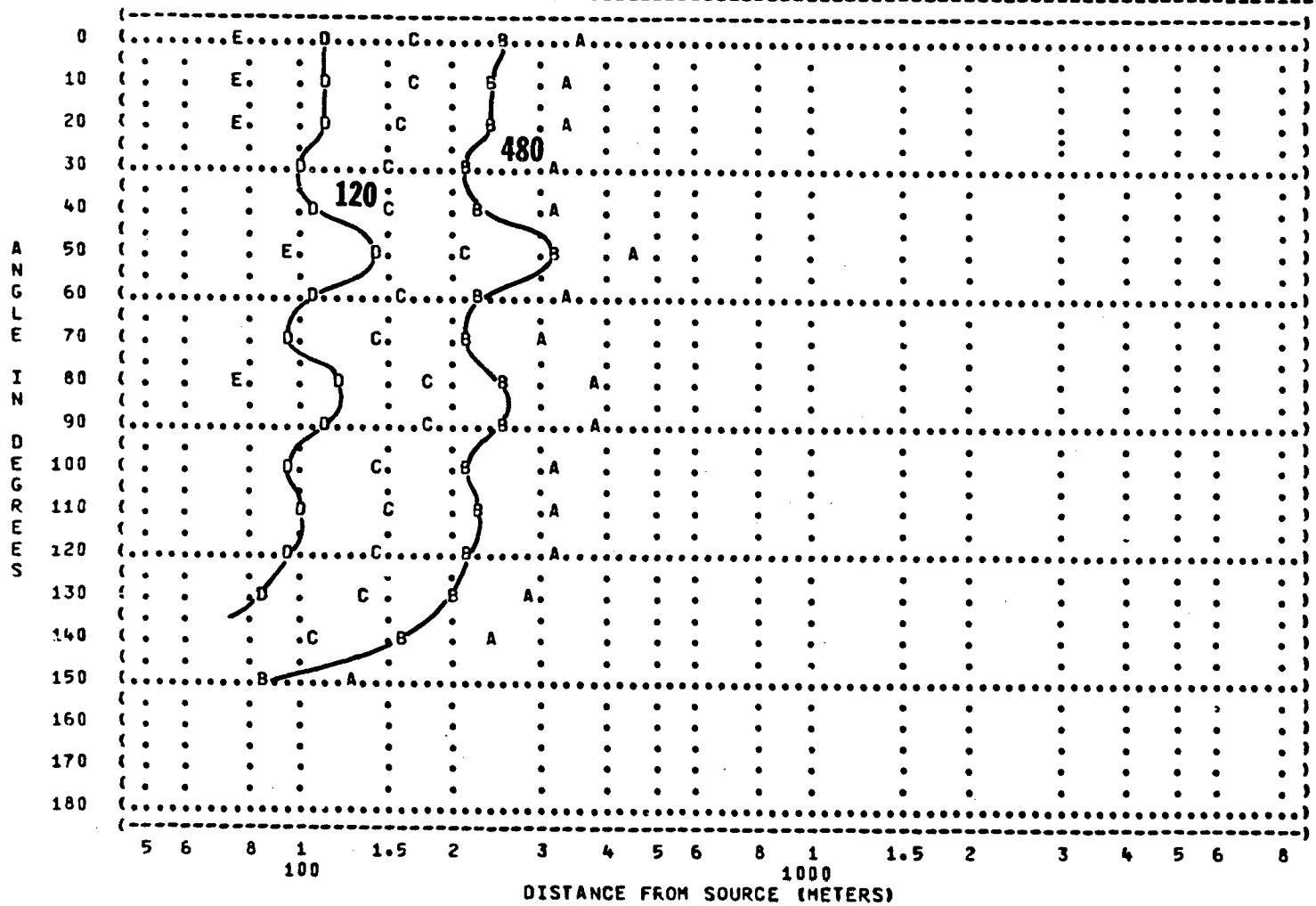
FIGURE 10 MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
NO PROTECTION

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
RUNUP POWER
9600 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 03
17 APR 75
PAGE 7




| POINT | MIN |
|---|---|
| A | 960 |
| B | 480 |
| C | 240 |
| D | 120 |
| E | 60 |

FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)

10 EQUAL TIME CONTOURS (MINUTES)
MINIMUM QPL EAR MUFFS

NOISE SOURCE/SUBJECT:

C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
RUNUP POWER
9600 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 03
17 APR 75
PAGE 8

| POINT | MIN |
|---|---|
| A | 960 |
| B | 480 |

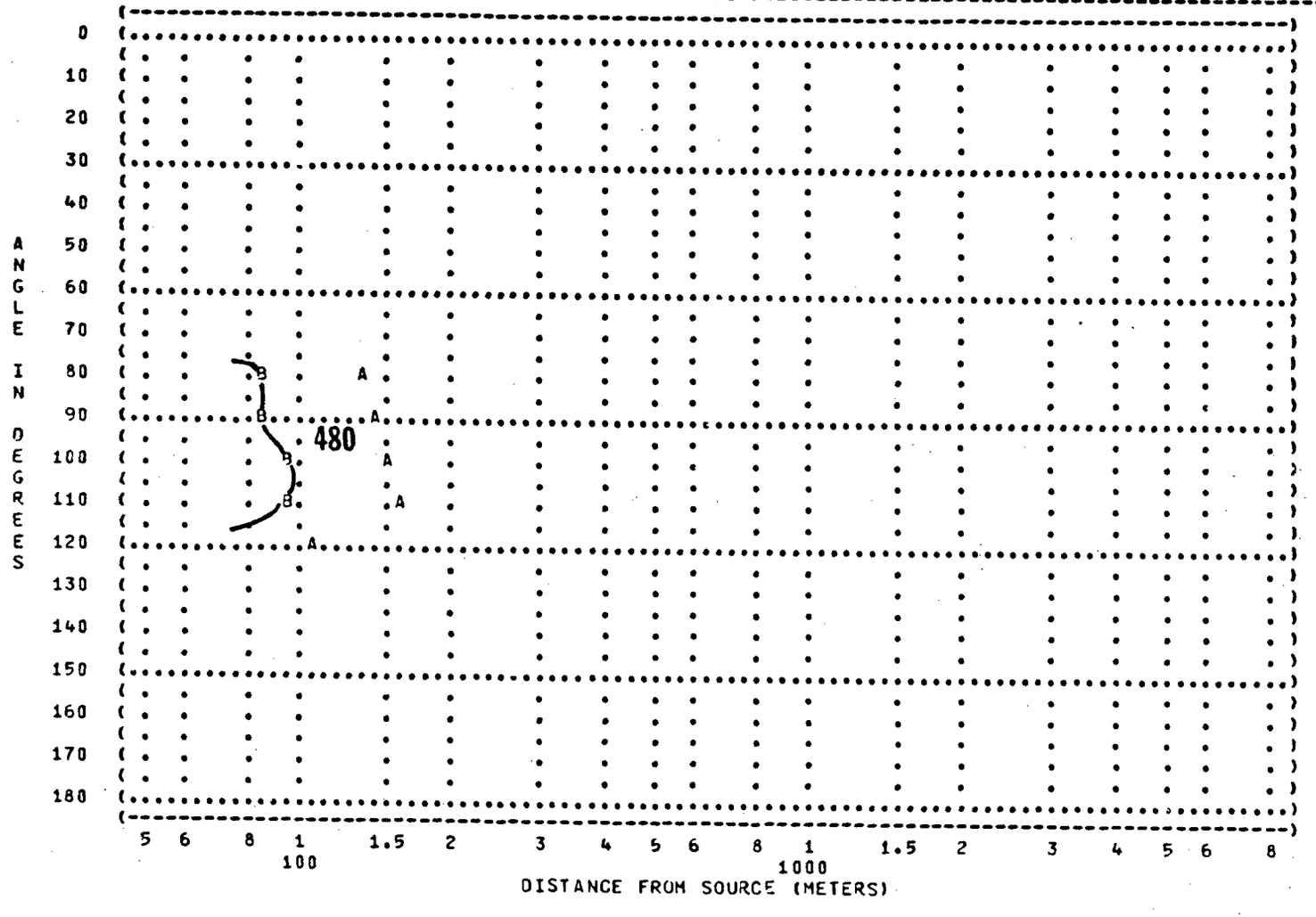


FIGURE 10 MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
AMERICAN OPTICAL 170[illegible] FAR [illegible]S

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 03
17 APR 75
PAGE 9

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

CONDITION:
[illegible] POWER
960[illegible] INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

| POINT | MIN |
|---|---|
| A | 960 |
| B | 480 |

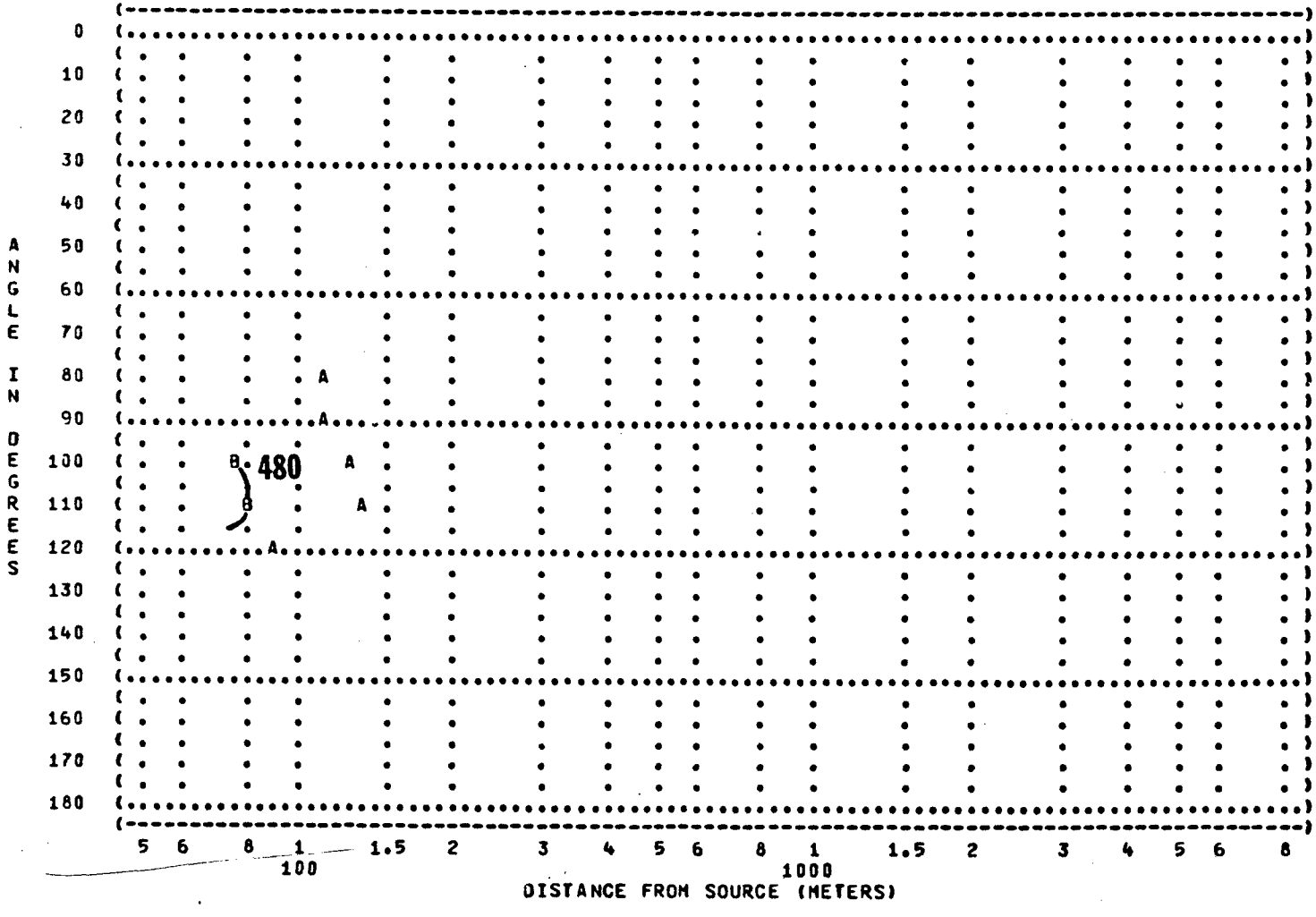


FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 03
17 APR 75
PAGE 10

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
RUNUP POWER
9600 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

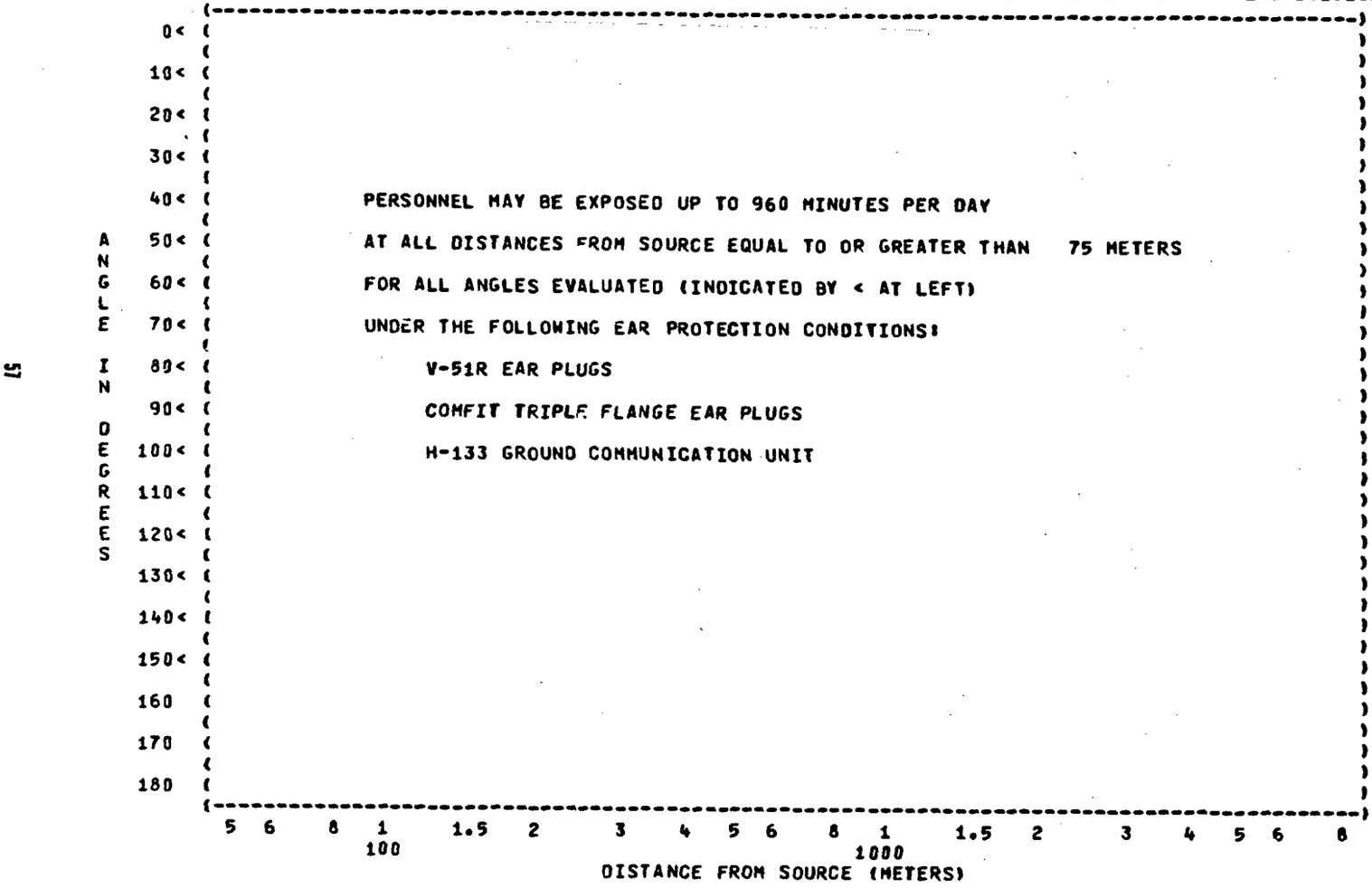


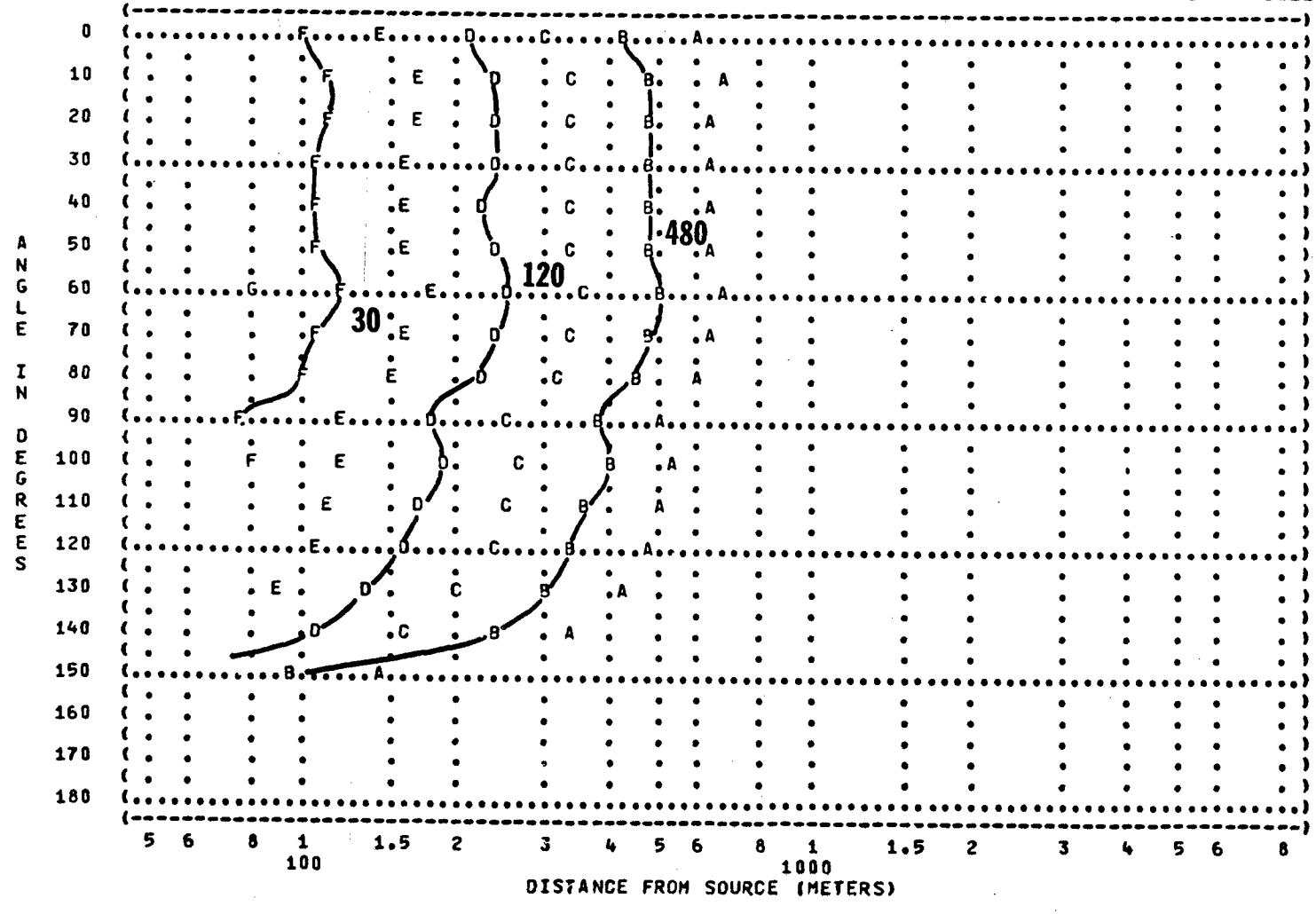
FIGURE 10 MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
NO PROTECTION

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
16800 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 04
17 APR 75
PAGE 7




| POINT | MIN |
|---|---|
| A | 960 |
| B | 480 |
| C | 240 |
| D | 120 |
| E | 60 |
| F | 30 |
| G | 15 |

FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
MINIMUM QPL EAR MUFFS

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
16800 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 04
17 APR 75
PAGE 8

| POINT | MIN |
|---|---|
| A | 960 |
| B | 480 |
| C | 240 |
| D | 120 |

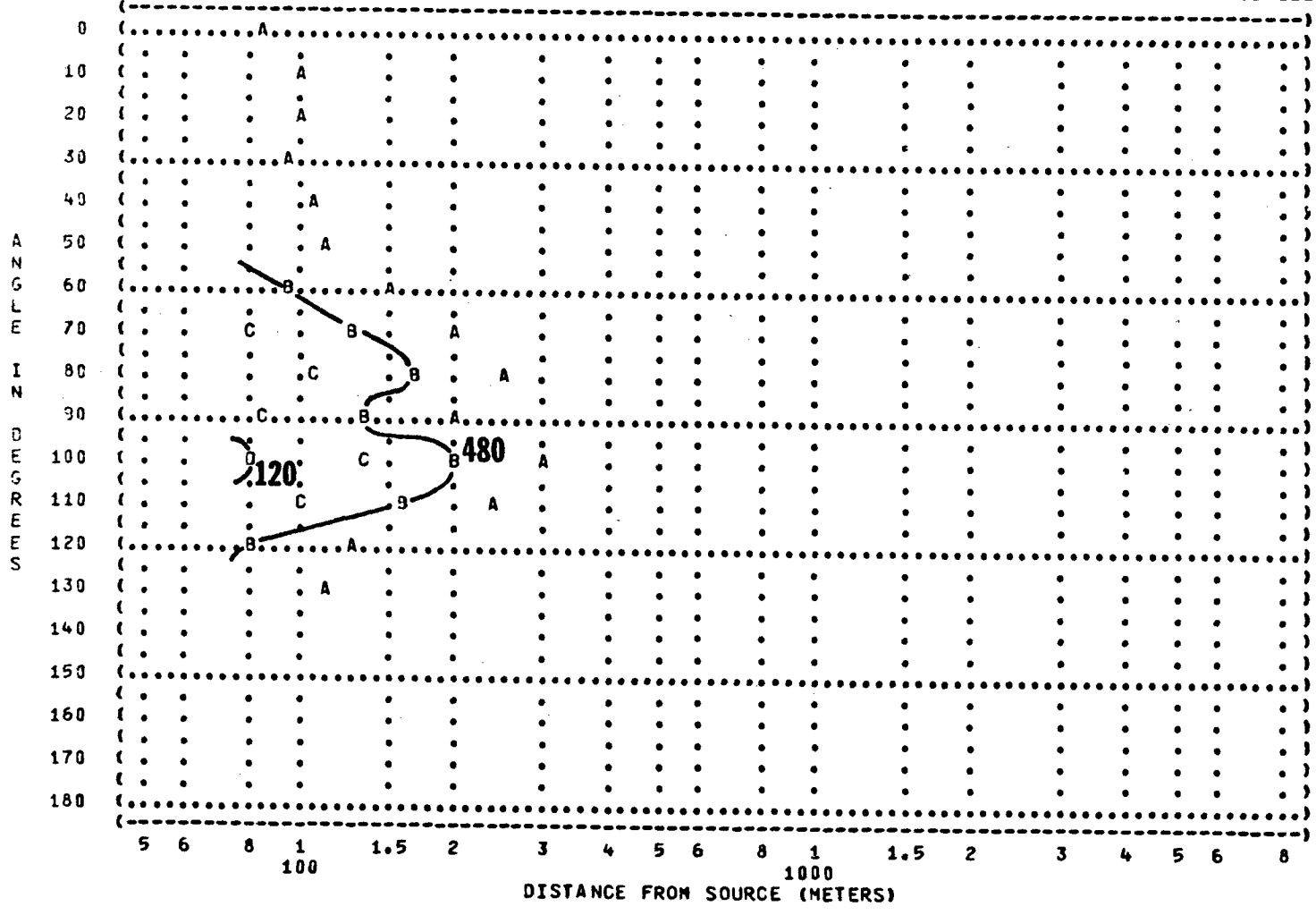


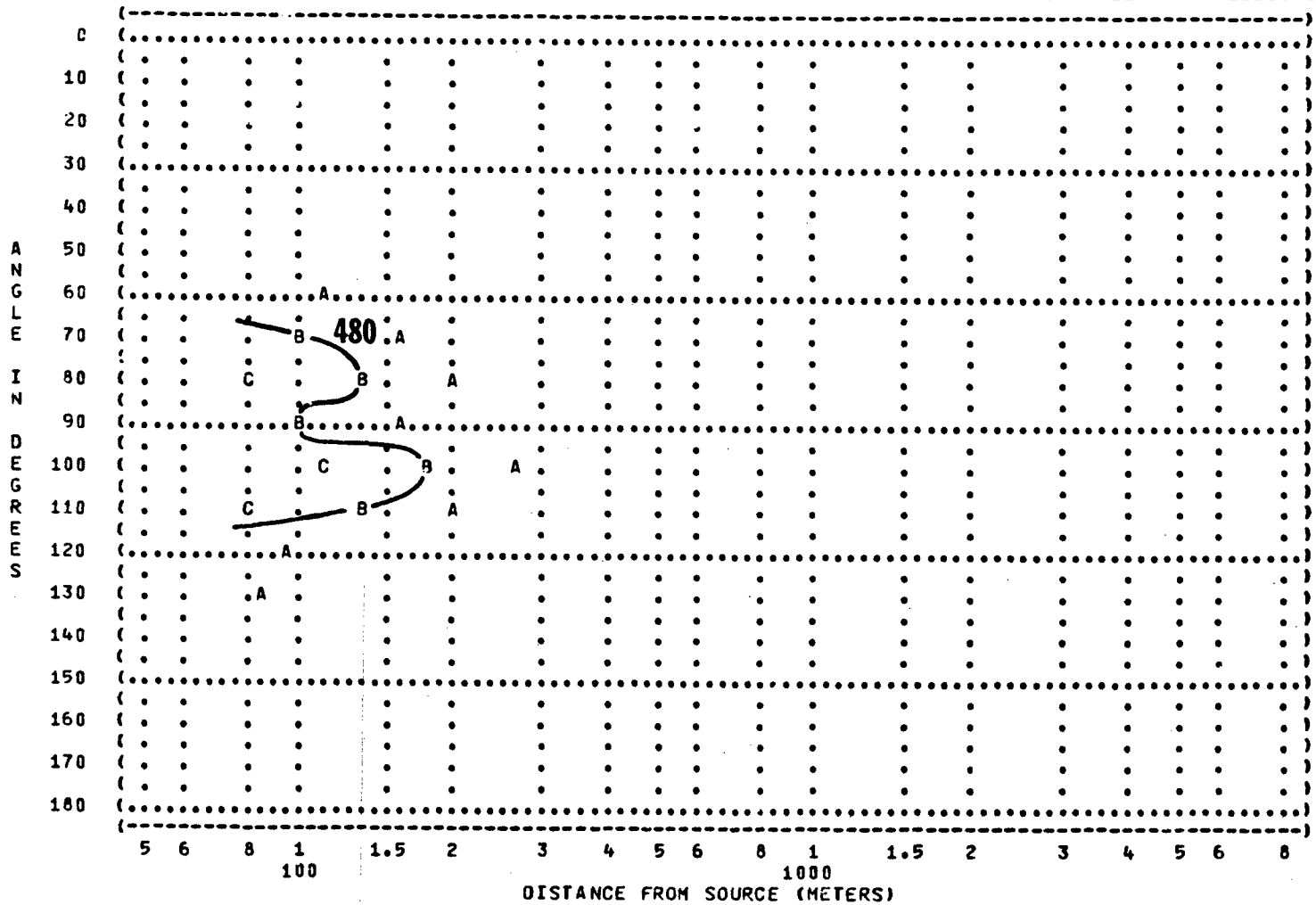
FIGURE 10 MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
AMERICAN OPTICAL 1700 EAR MUFFS

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
16800 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 04
17 APR 75
PAGE 9




| POINT | MIN |
|---|---|
| A | 960 |
| B | 480 |
| C | 240 |

FIGURE: 10 MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
V-51R EAR PLUGS

IDENTIFICATION:
OMEGA 1.4
TEST 75-J02-021
RUN 04
17 APR 75
PAGE 10

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
16800 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

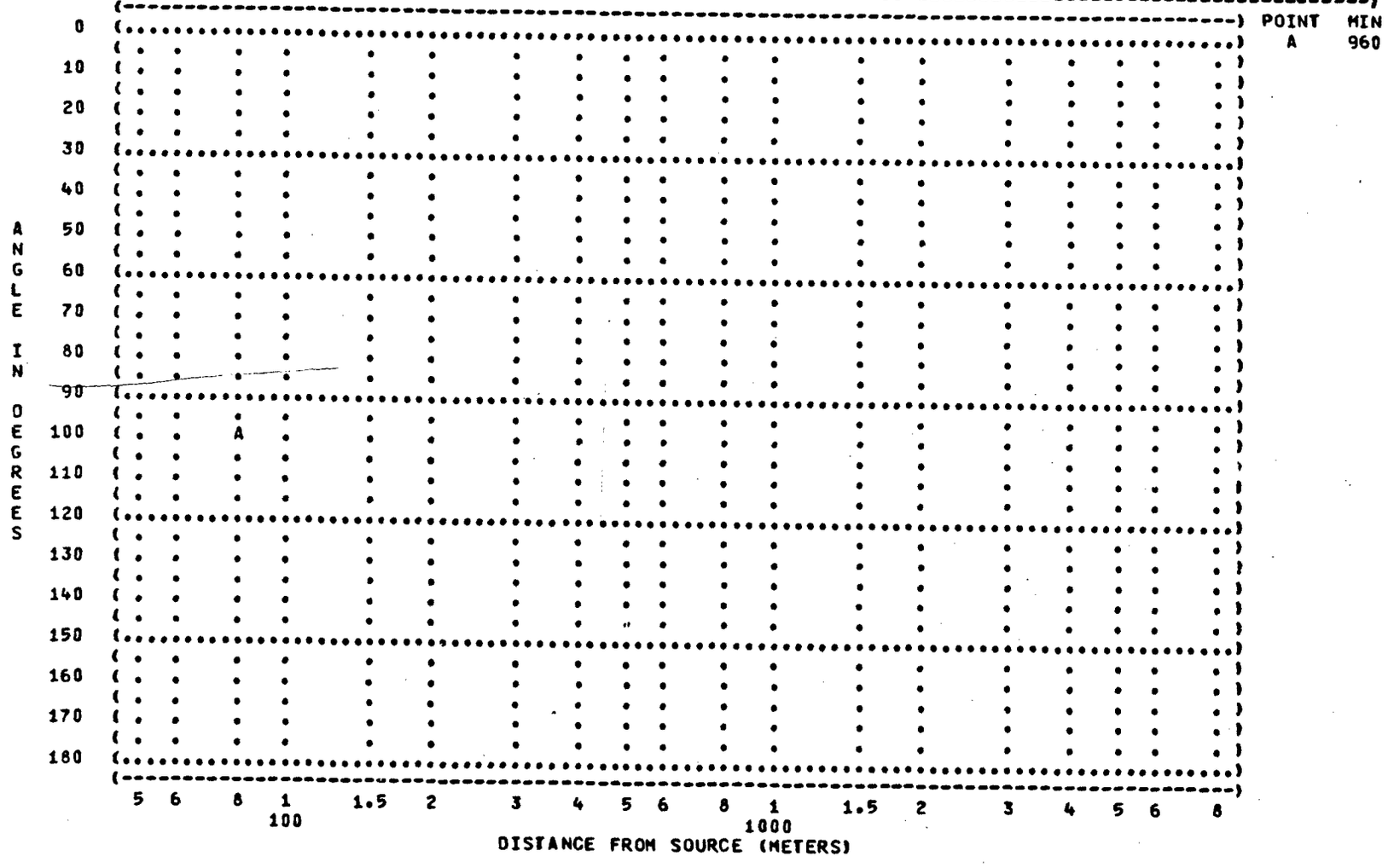


FIGURE 10 MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
COMFIT TRIPLE FLANGE EAR PLUGS

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 04
17 APR 75
PAGE 11

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
16800 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

POINT MIN
A 960

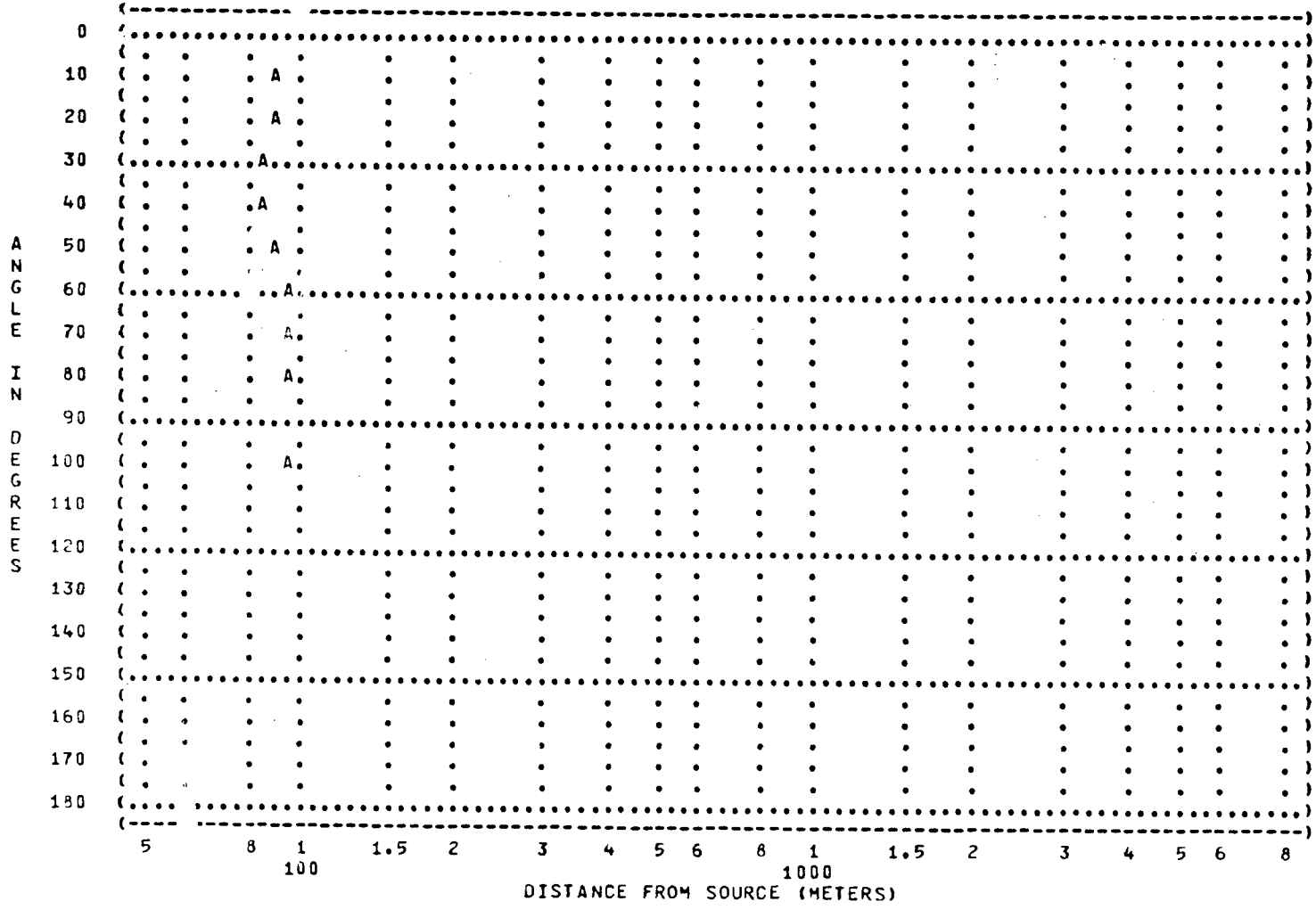


FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
H-133 GROUND COMMUNICATION UNIT

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
16800 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 04
17 APR 75
PAGE 12

| POINT | MIN |
|---|---|
| A | 960 |
| B | 480 |

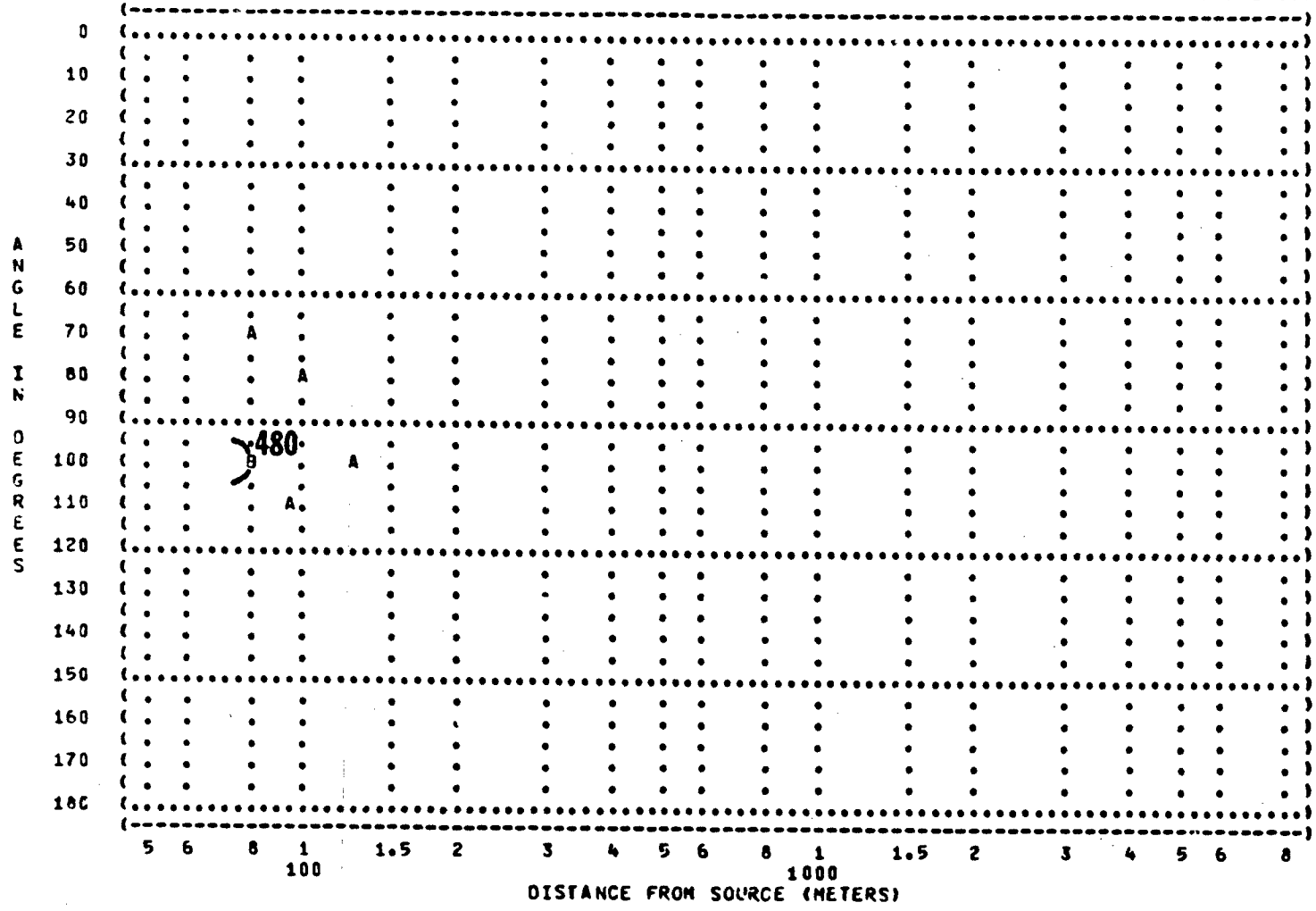


FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 31.5 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:

C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:

IDLE POWER, LOW SPEED
800 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:

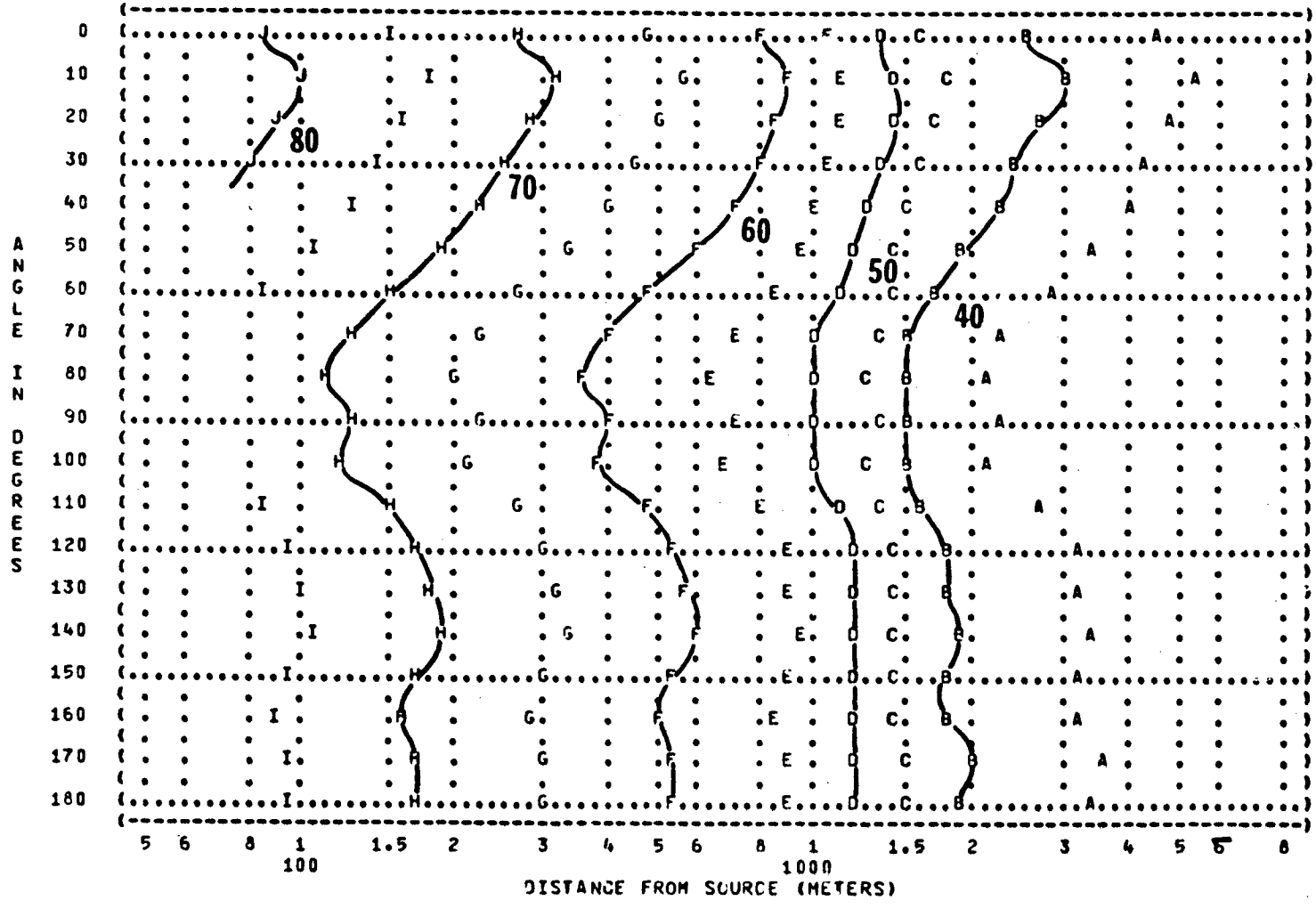
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:

OMEGA 1.4
TEST 75-002-021
RUN 01

17 APR 75

PAGE 18




| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |

FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 63 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:

C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:

IDLE POWER, LOW SPEED
800 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:

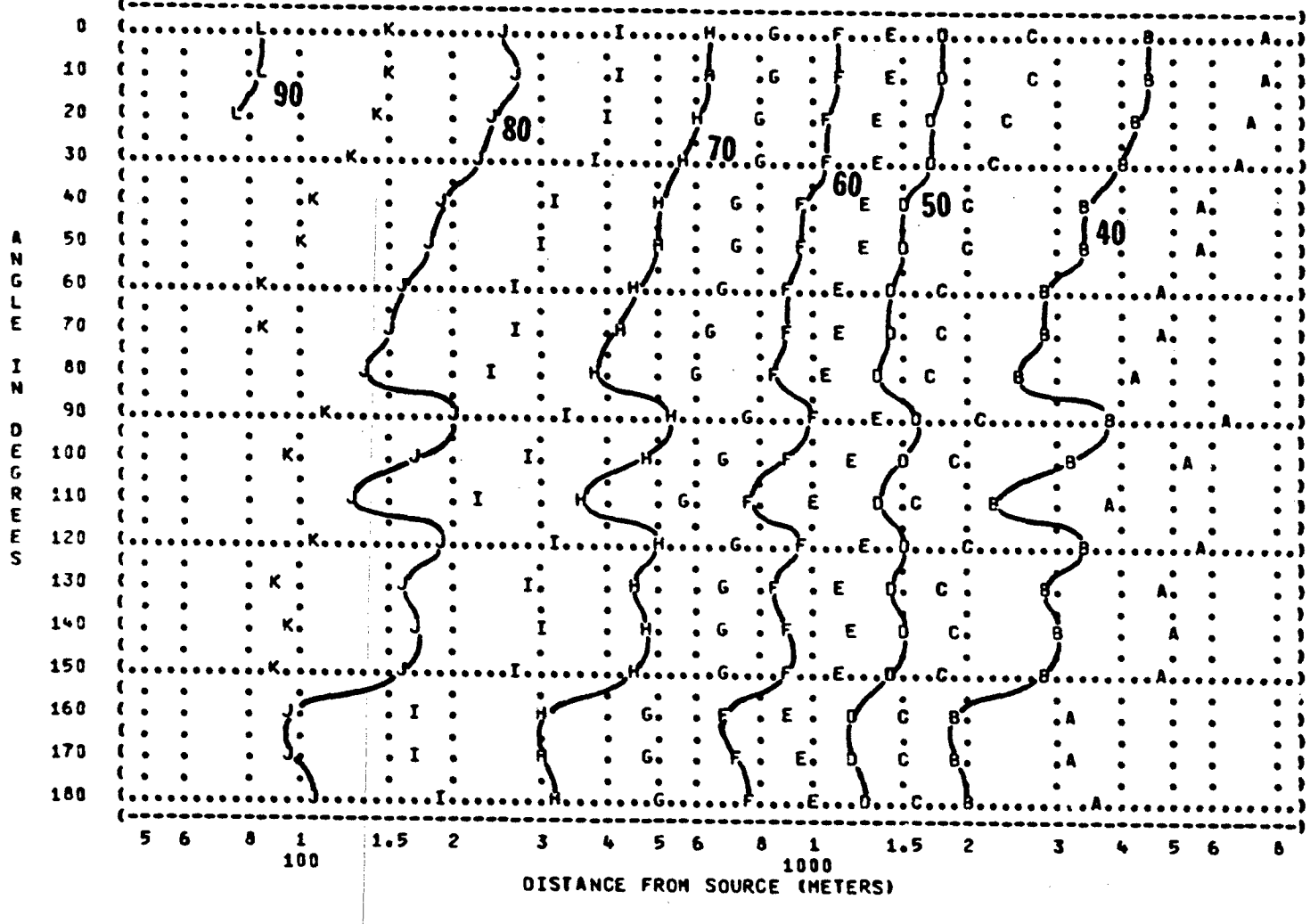
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:

OMEGA 1.4
TEST 75-002-021
RUN 01

17 APR 75

PAGE 19




| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |
| L | 90 |

FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 125 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER, LOW SPEED
800 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 01
17 APR 75
PAGE 20

| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |
| L | 90 |
| M | 95 |

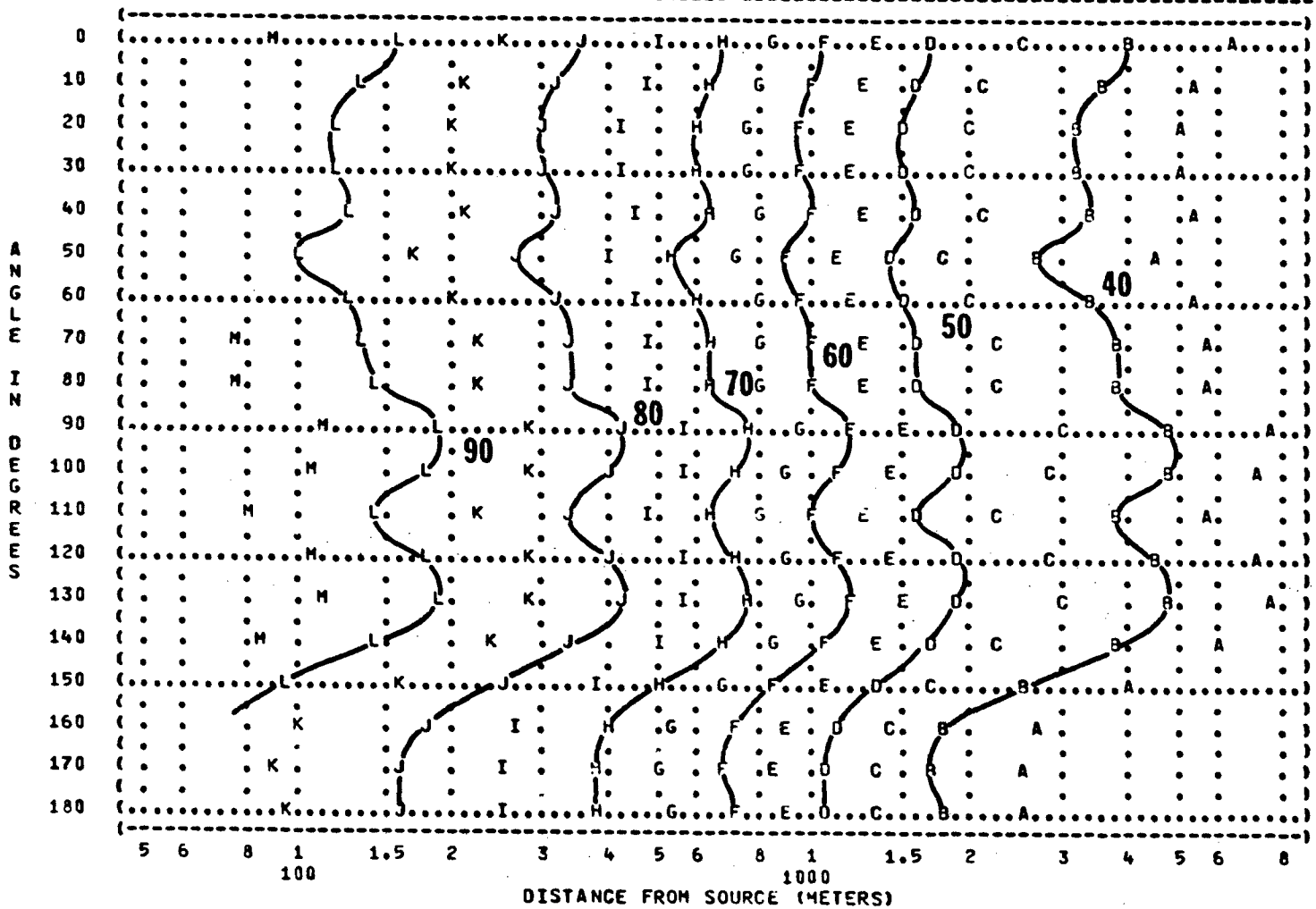


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 250 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:

C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:

IDLE POWER, LOW SPEED
800 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:

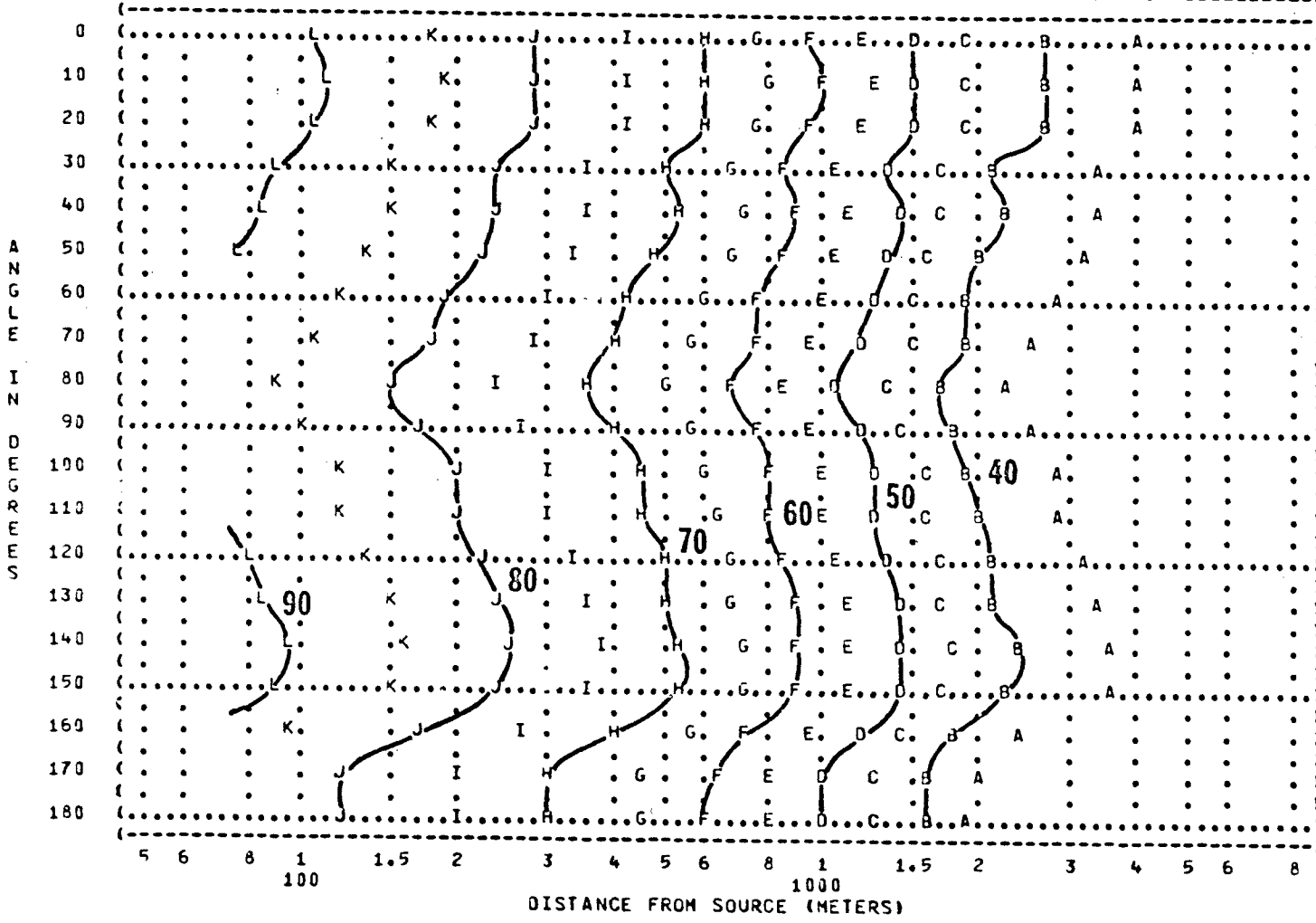
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:

OMEGA 1.4
TEST 75-002-021
RUN 01

17 APR 75

PAGE 21




| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |
| L | 90 |

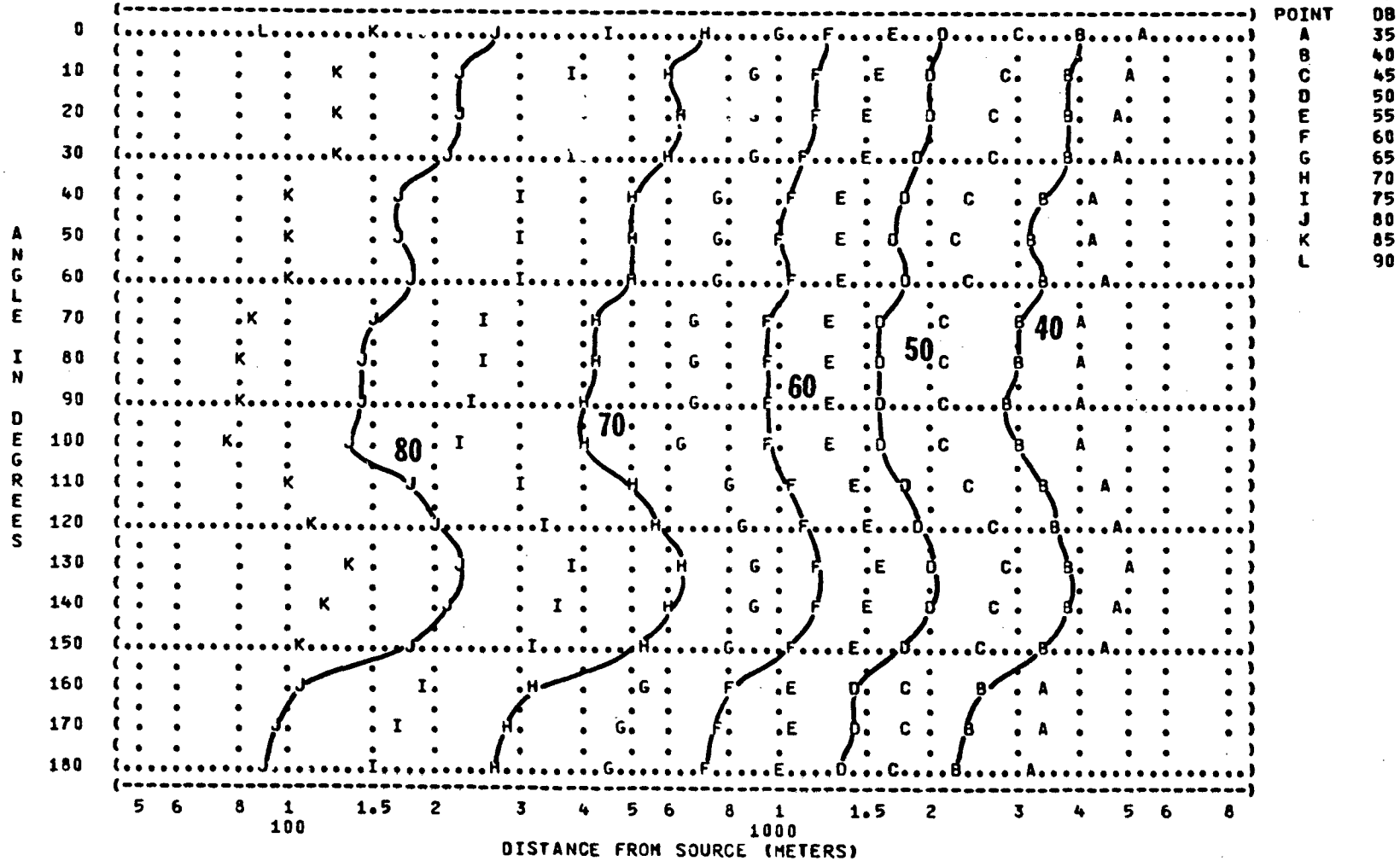
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 500 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER, LOW SPEED
800 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 01
17 APR 75
PAGE 22




| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |
| L | 90 |

FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 1000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER, LOW SPEED
800 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 01
17 APR 75
PAGE 23

| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |

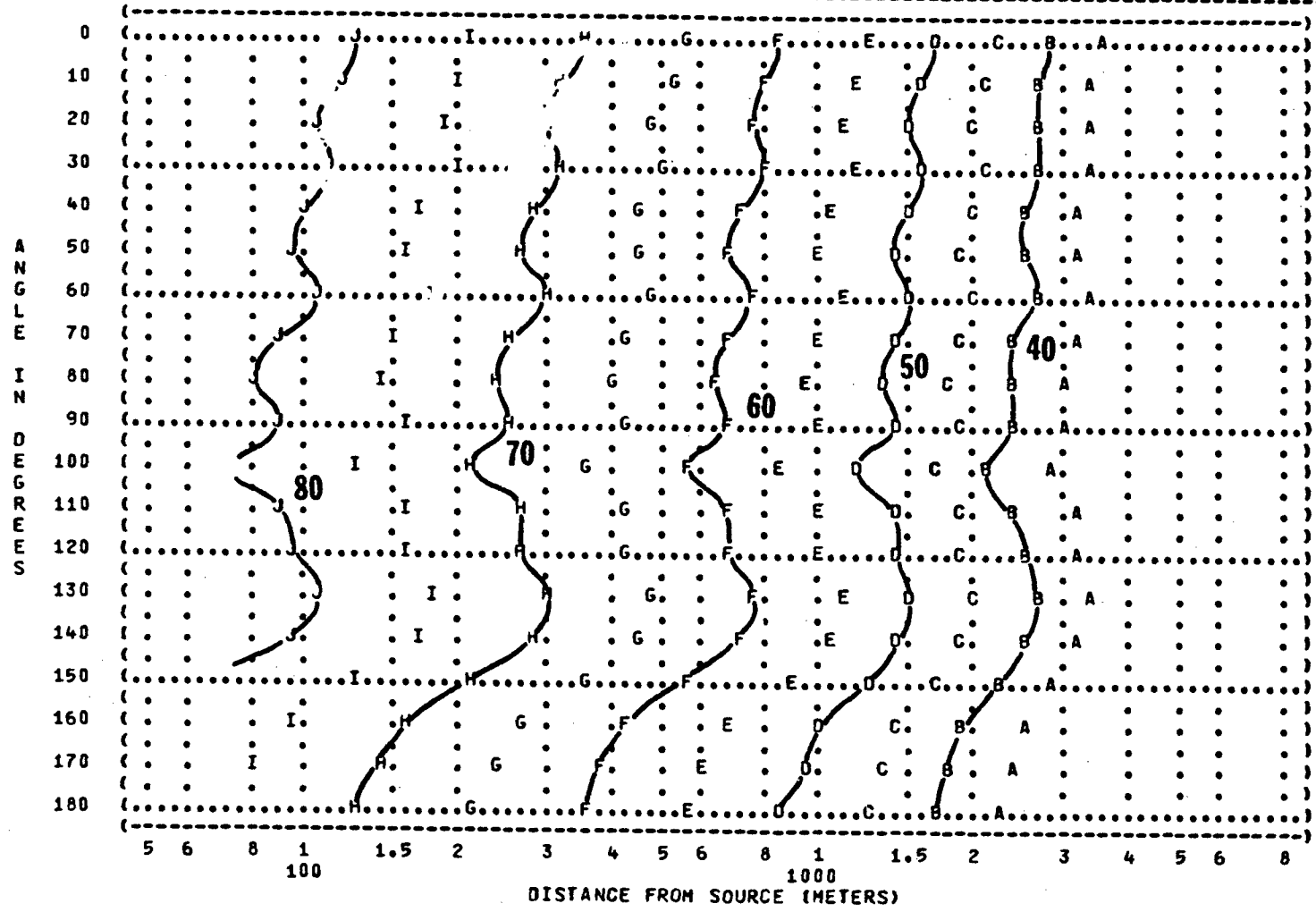


FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 2000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER, LOW SPEED
800 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 01
17 APR 75
PAGE 24

| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |

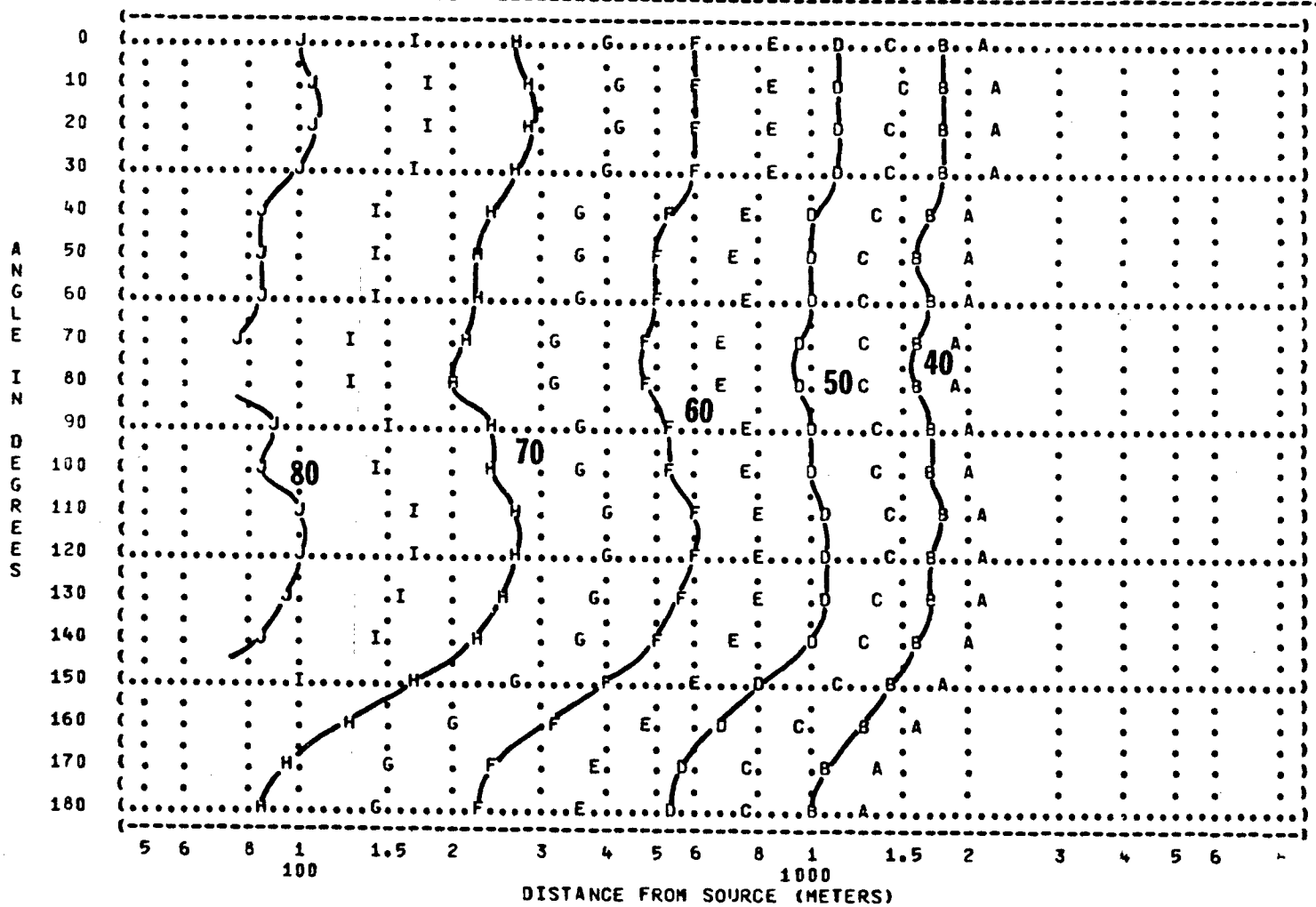


FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 4000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER, LOW SPEED
800 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 01
17 APR 75
PAGE 25

| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |

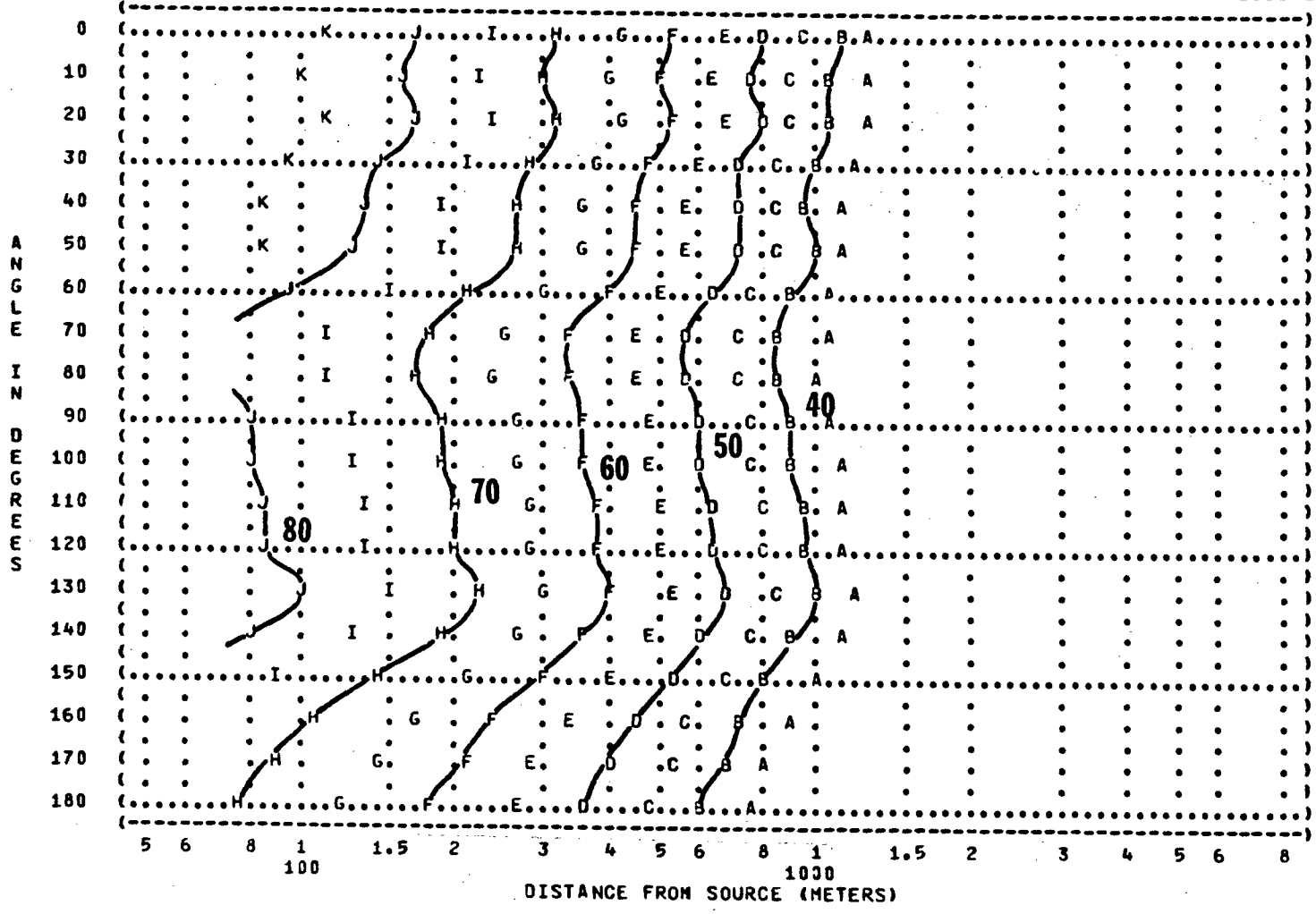


FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 8000 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 01
17 APR 75
PAGE 26

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER, LOW SPEED
800 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |

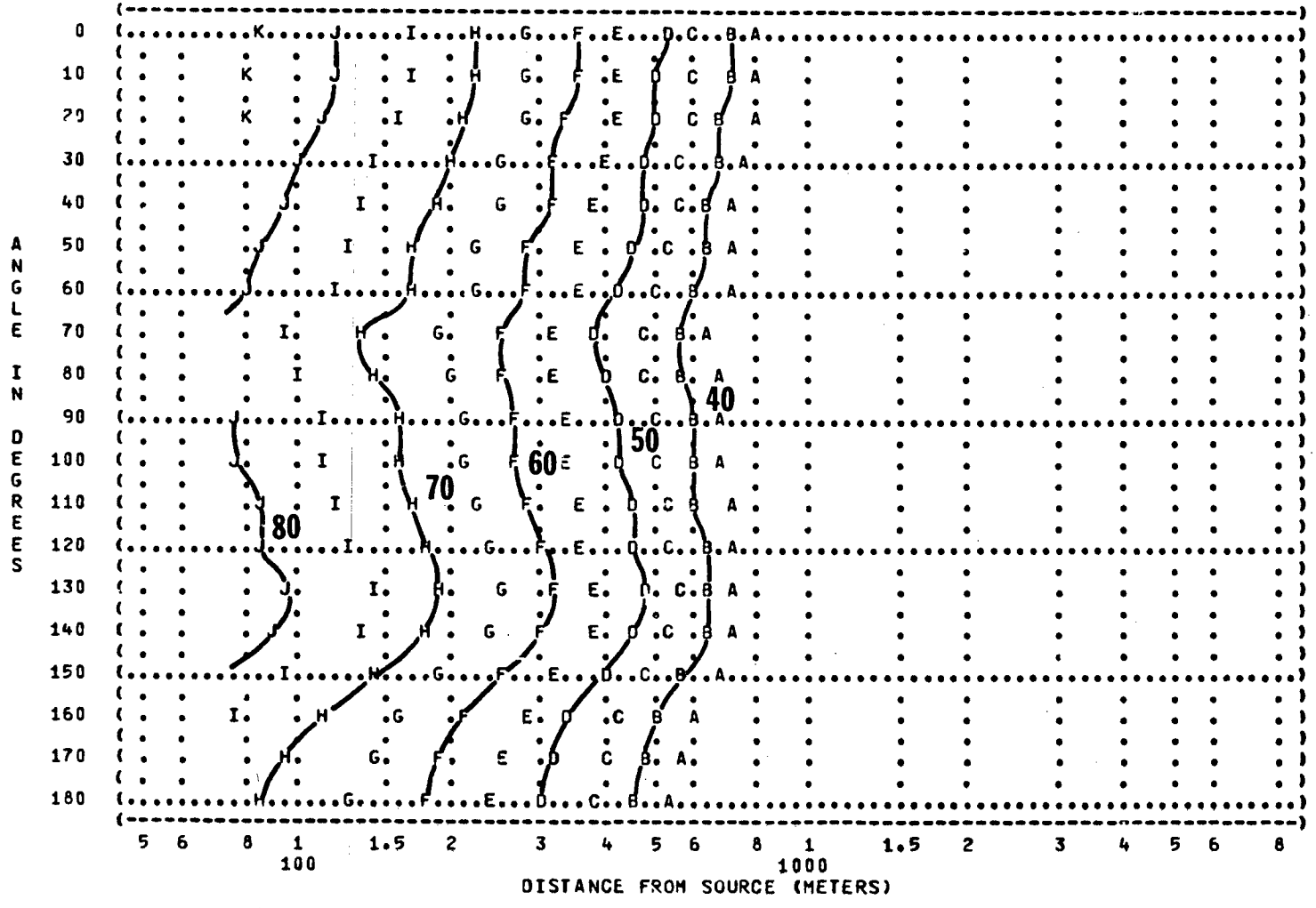


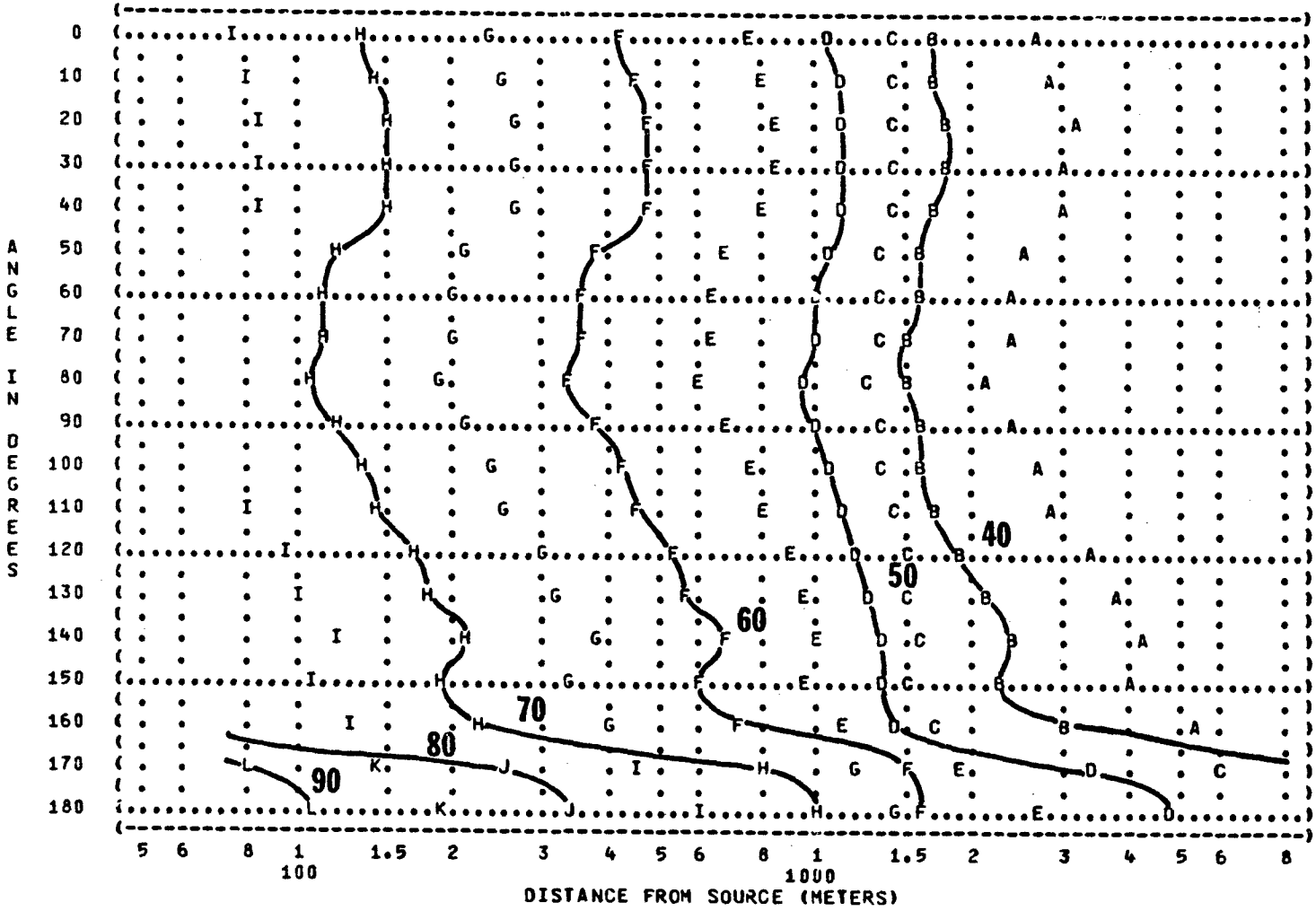
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 31.5 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER, NORMAL SPEED
1400 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 02
17 APR 75
PAGE 18




| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |
| L | 90 |

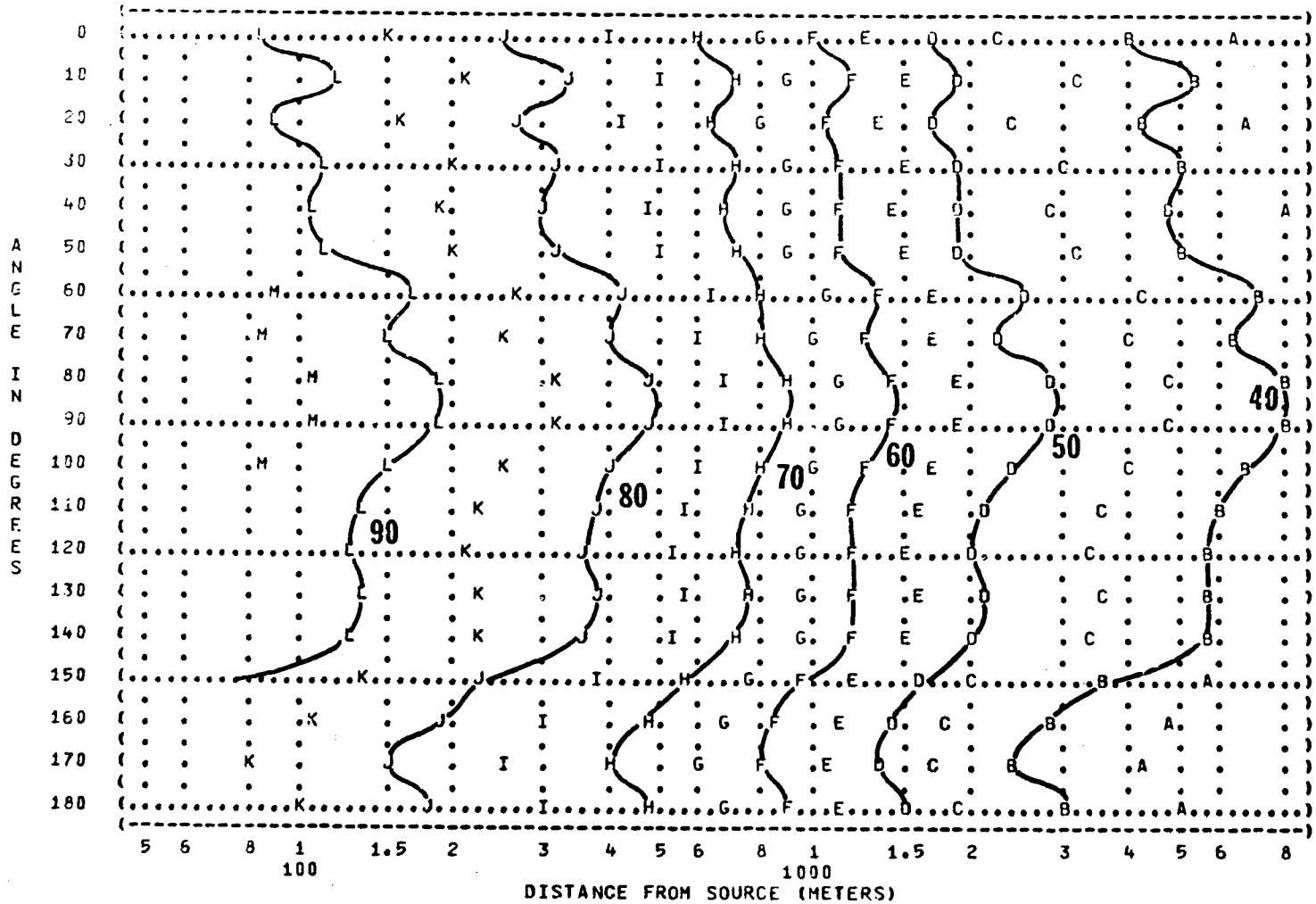
FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 63 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER, NORMAL SPEED
1400 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-121
RUN 02
17 APR 75
PAGE 19




| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |
| L | 90 |
| M | 95 |

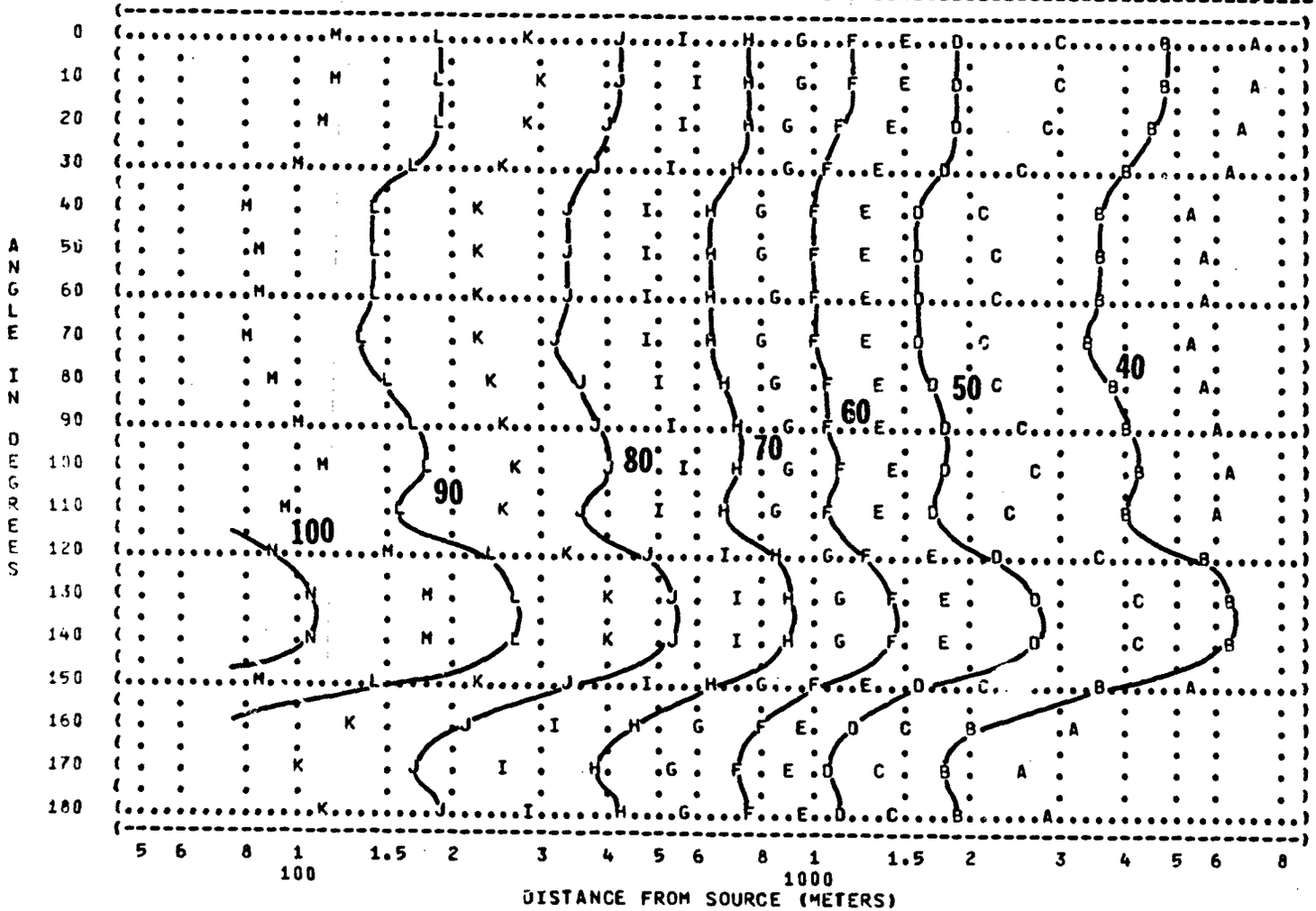
FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 125 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER, NORMAL SPEED
1400 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 02
17 APR 75
PAGE 20




| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |
| L | 90 |
| M | 95 |
| N | 100 |

FIGURE: 11

SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
250 HZ OCTAVE BAND

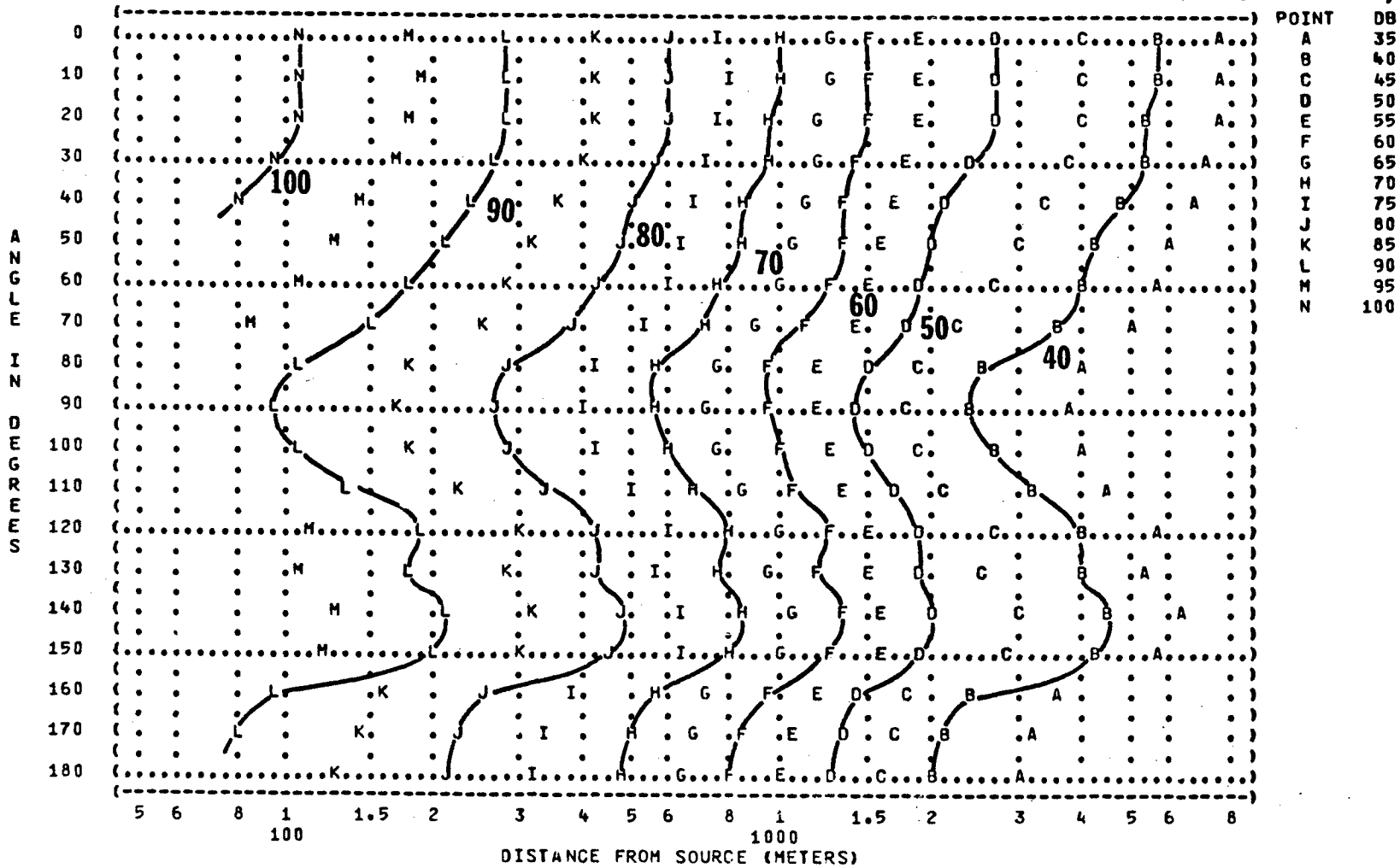
NOISE SOURCE/SUBJECT:

C-130E AIRCRAFT
T55-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER, NORMAL SPEED
1400 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 02
17 APR 75
PAGE 21




| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |
| L | 90 |
| M | 95 |
| N | 100 |

FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 500 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

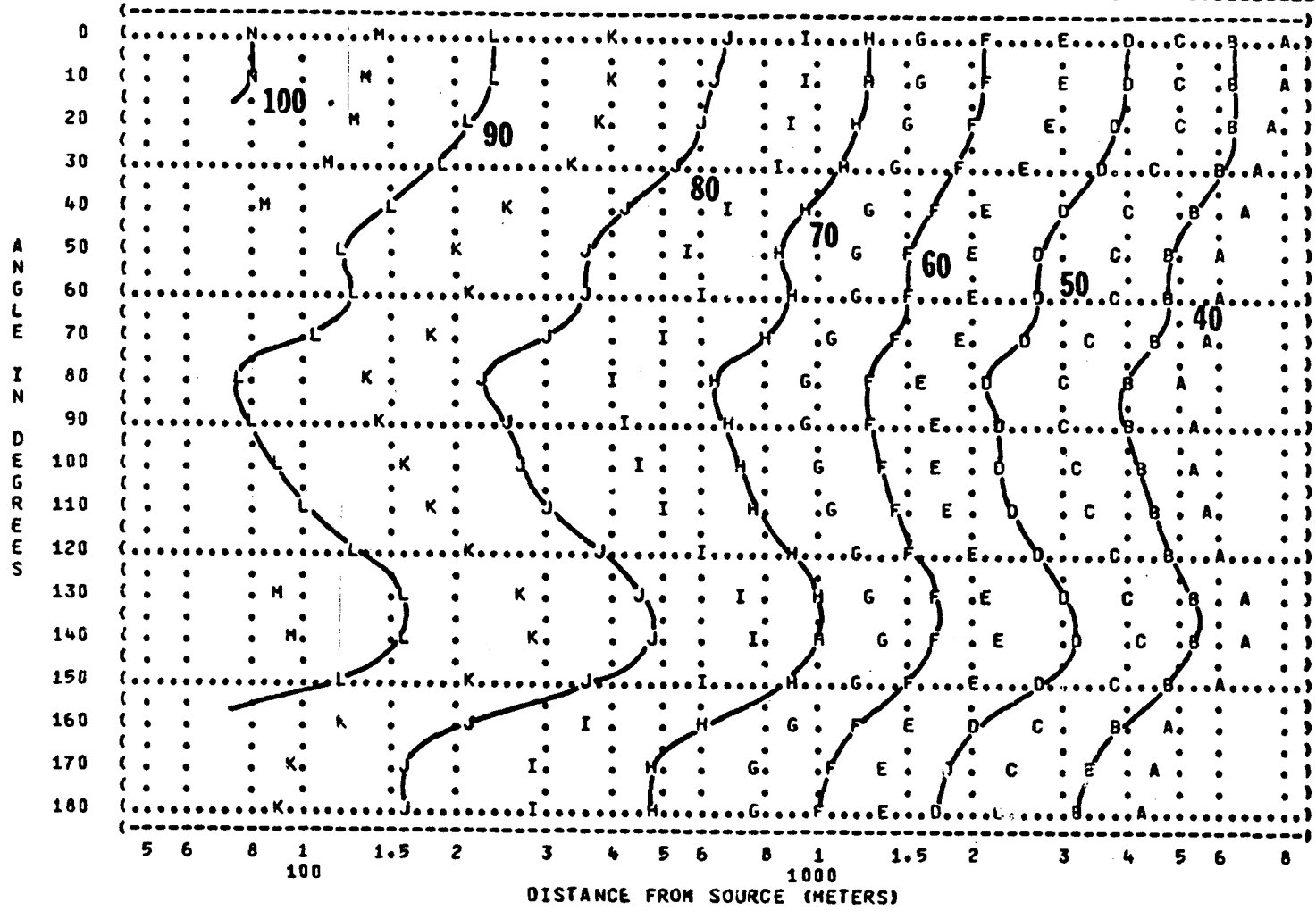
OPERATION:
IDLE POWER, NORMAL SPEED
1400 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 02

17 APR 75






| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |
| L | 90 |
| M | 95 |
| N | 100 |

FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 1000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER, NORMAL SPEED
1400 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 02
17 APR 75
PAGE 23

| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |
| L | 90 |

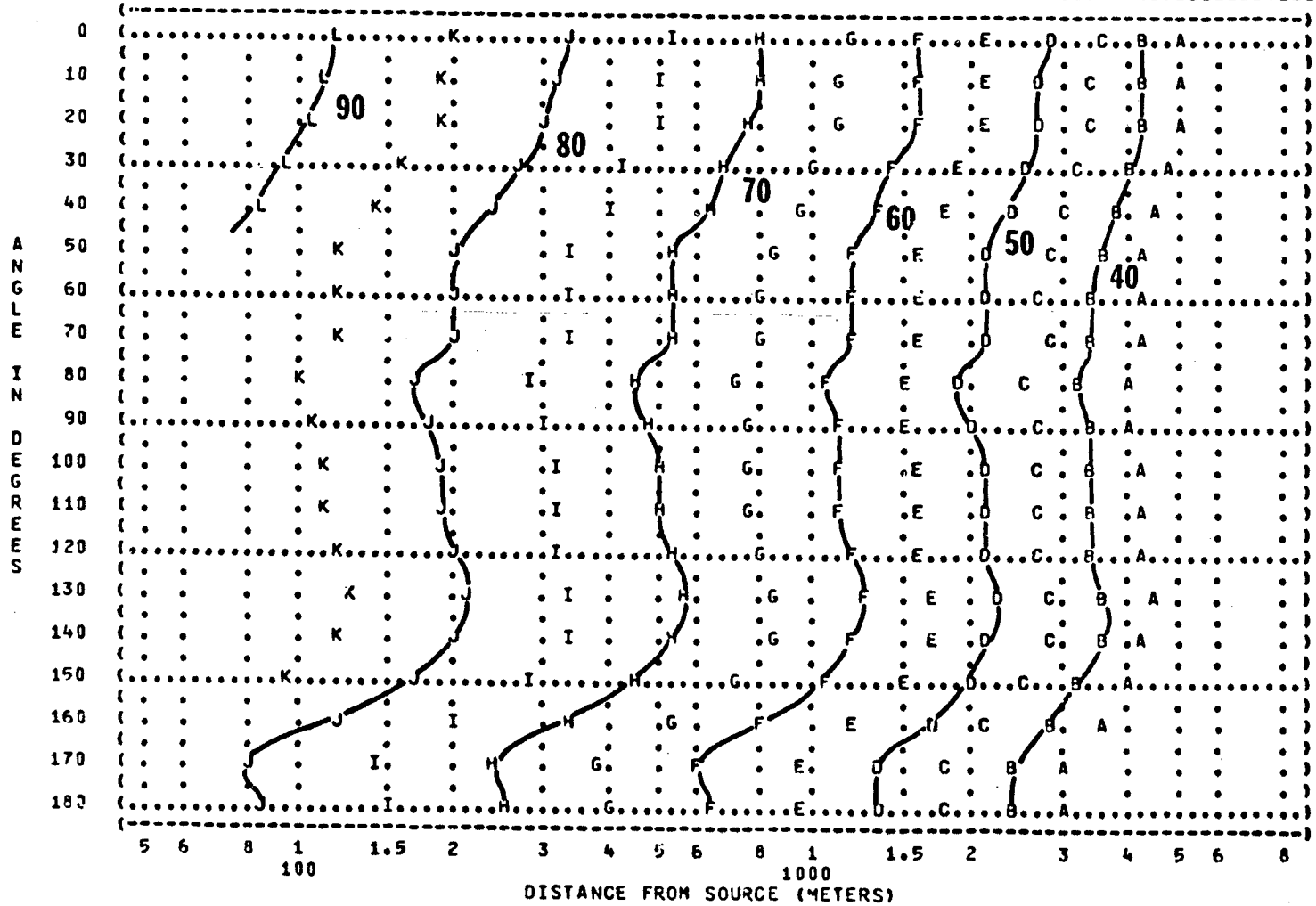


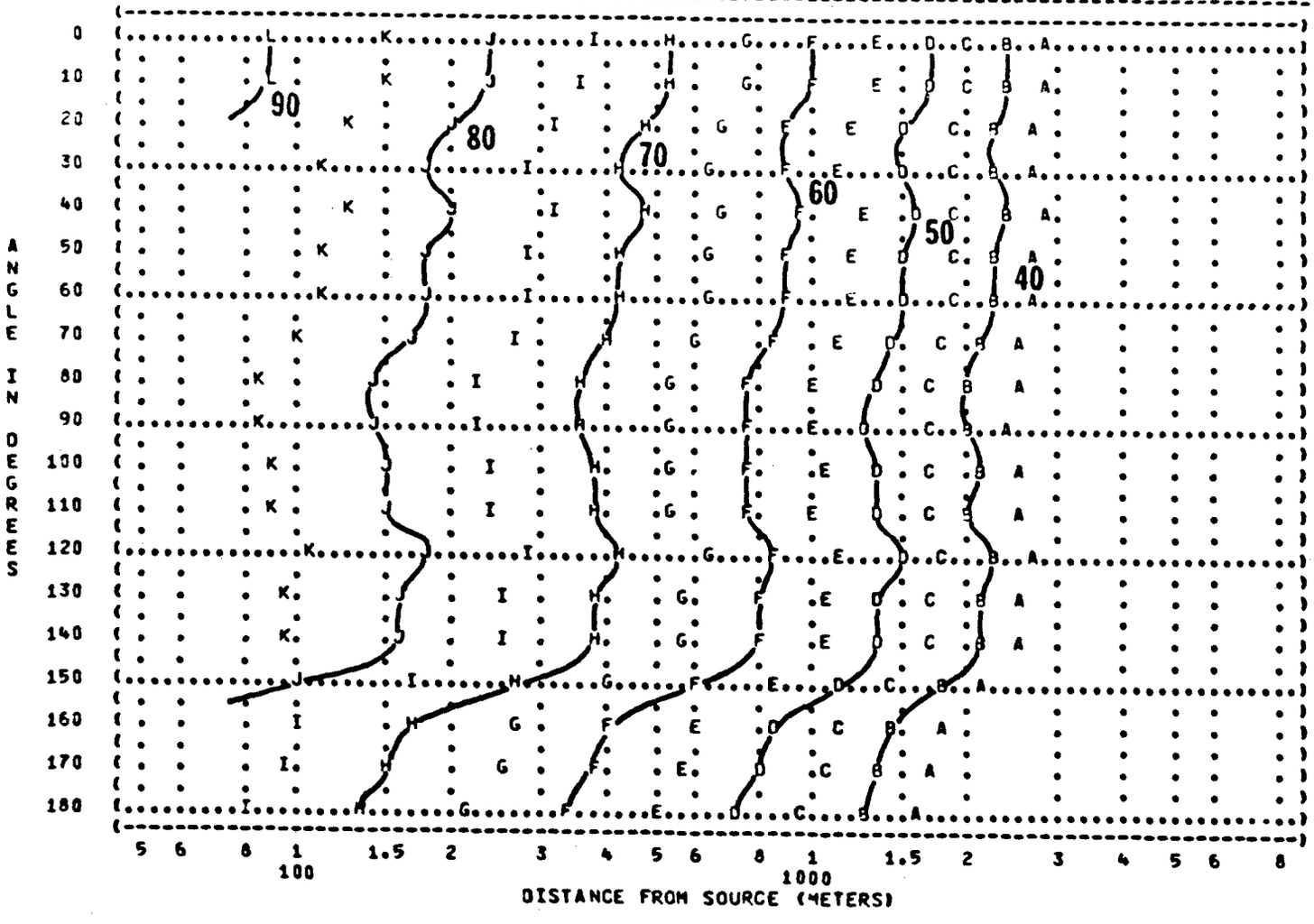
FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 2000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER, NORMAL SPEED
1400 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 02
17 APR 75
PAGE 24




| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |
| L | 90 |

FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 4000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER, NORMAL SPEED
1400 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 02
17 APR 75
PAGE 25

| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |

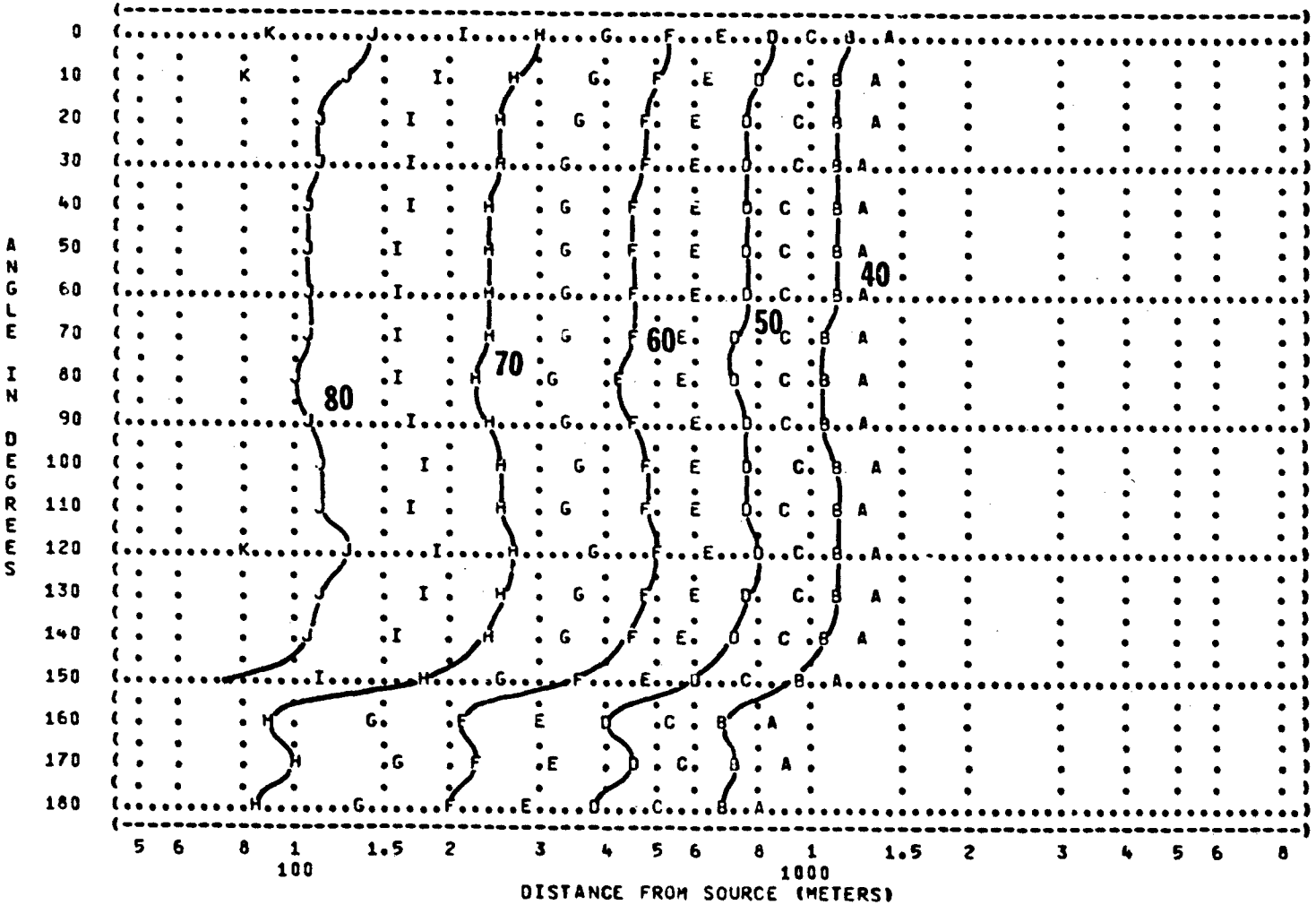


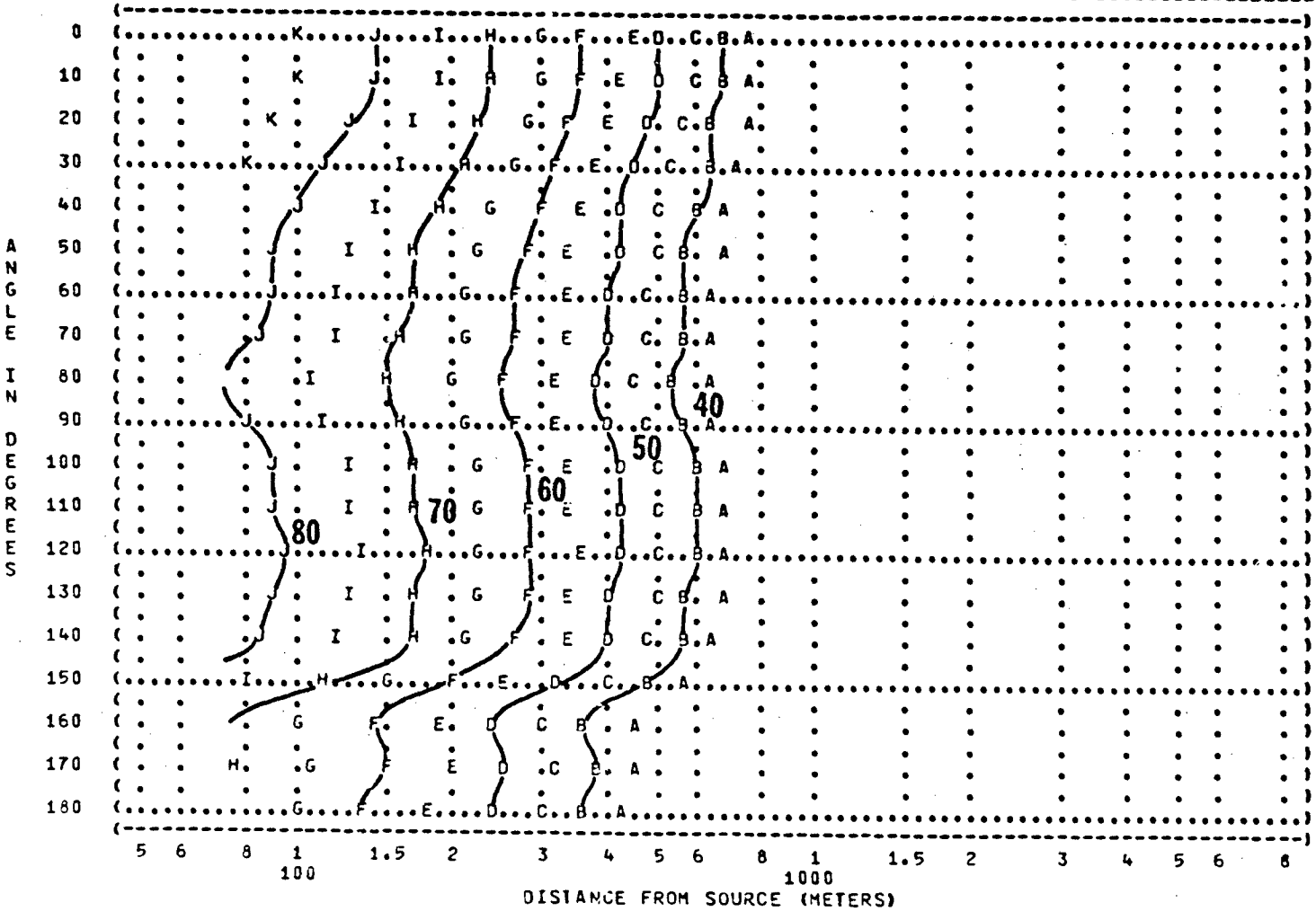
FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 8000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER, NORMAL SPEED
1400 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 02
17 APR 75
PAGE 26




| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |

FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 31.5 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
RUNUP POWER
9600 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 03
17 APR 75
PAGE 18

| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |

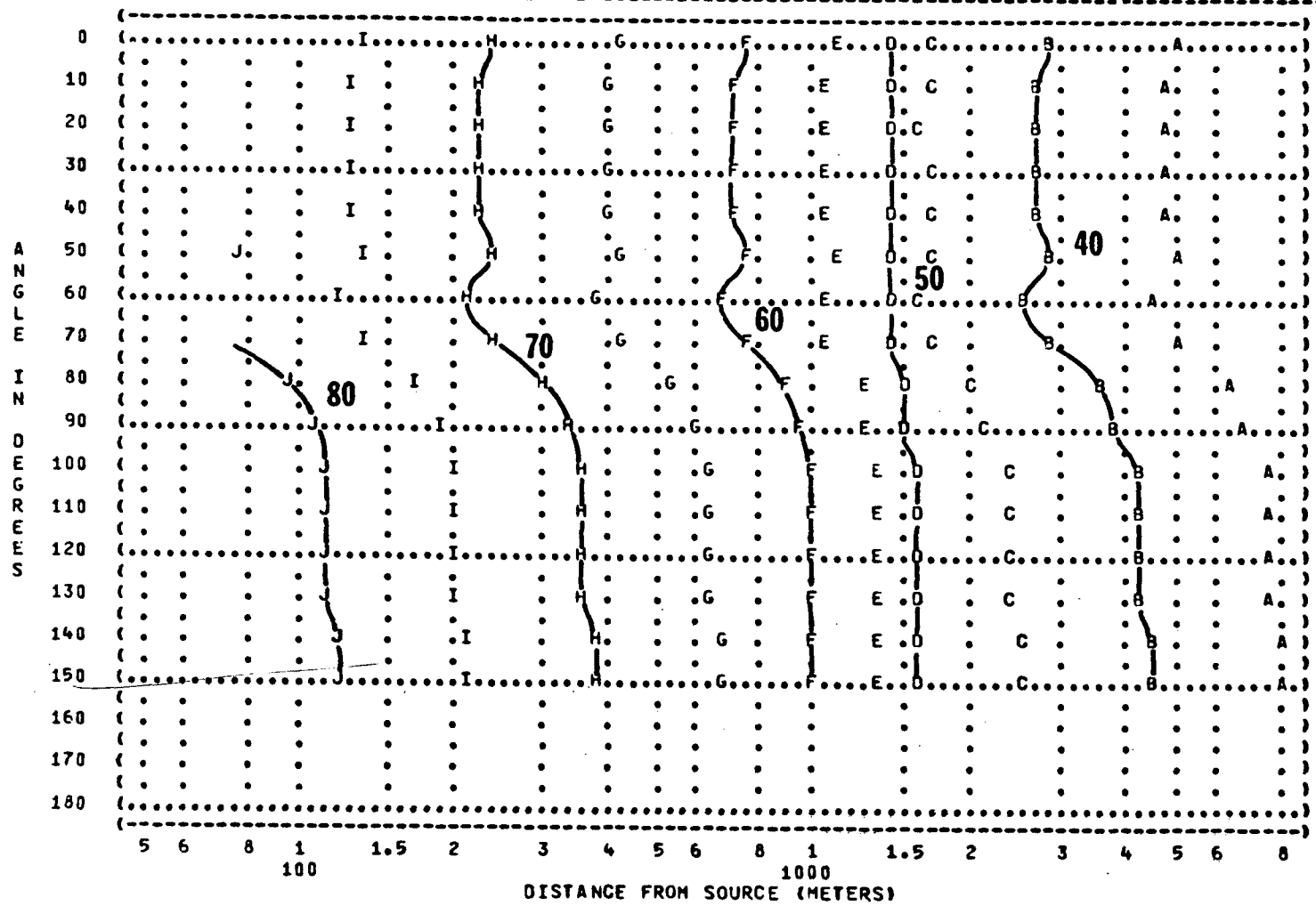


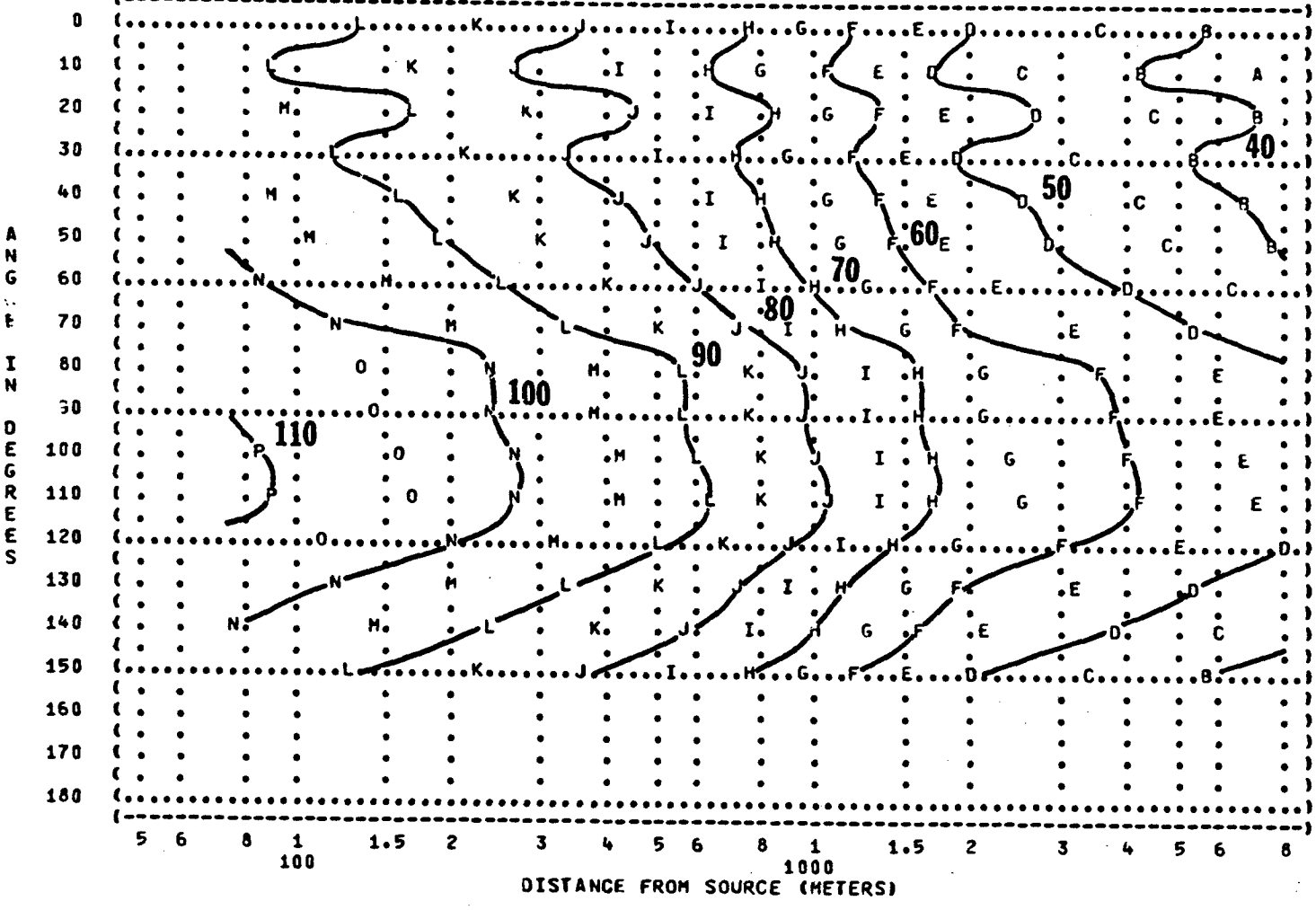
FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 63 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
RUNUP POWER
9600 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 03
17 APR 75
PAGE 19




| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |
| L | 90 |
| M | 95 |
| N | 100 |
| O | 105 |
| P | 110 |

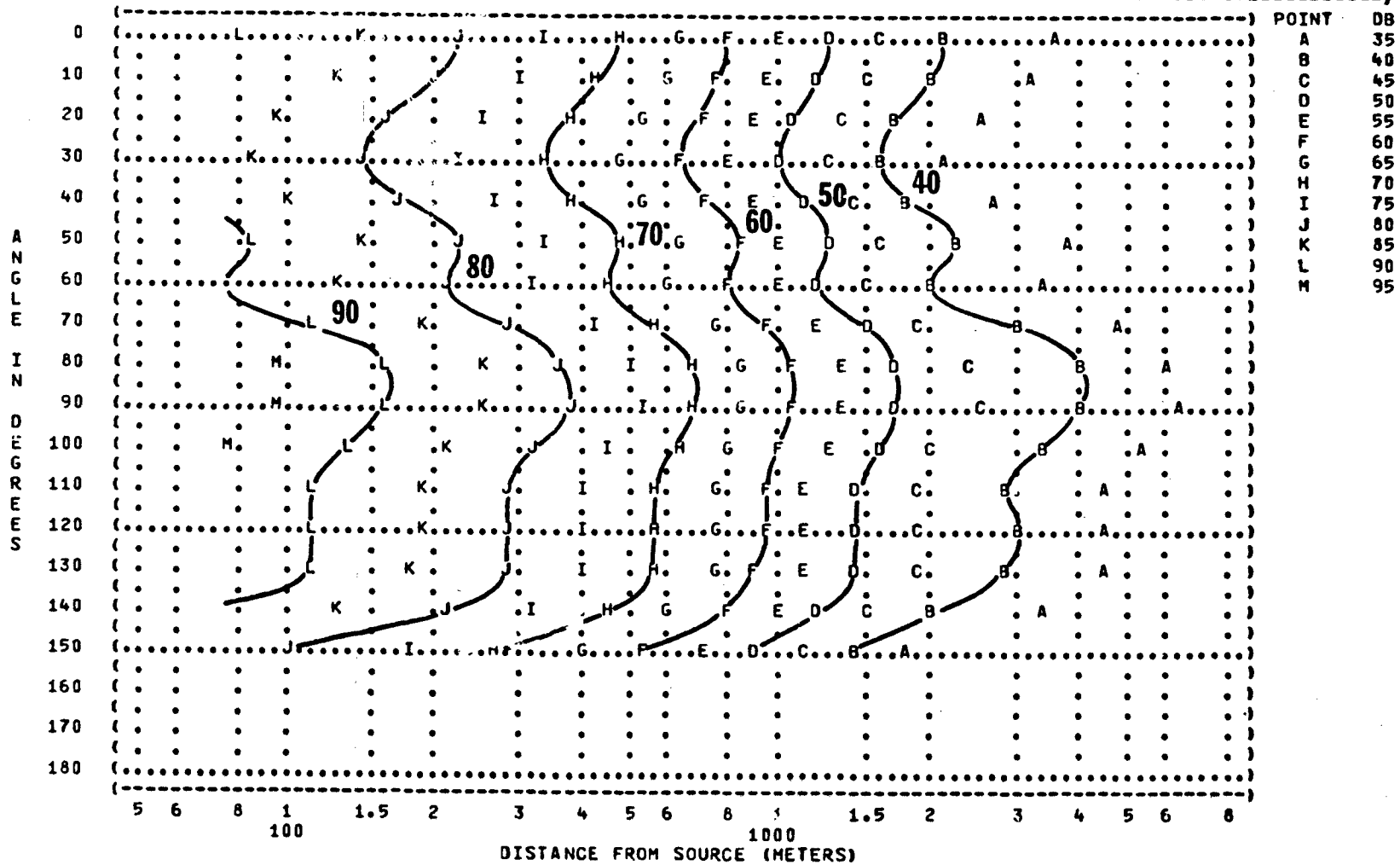
FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 125 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 03
17 APR 75
PAGE 20

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
RUNUP POWER
9600 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %




| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |
| L | 90 |
| M | 95 |

FIGURE: 11

SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
250 HZ OCTAVE BAND

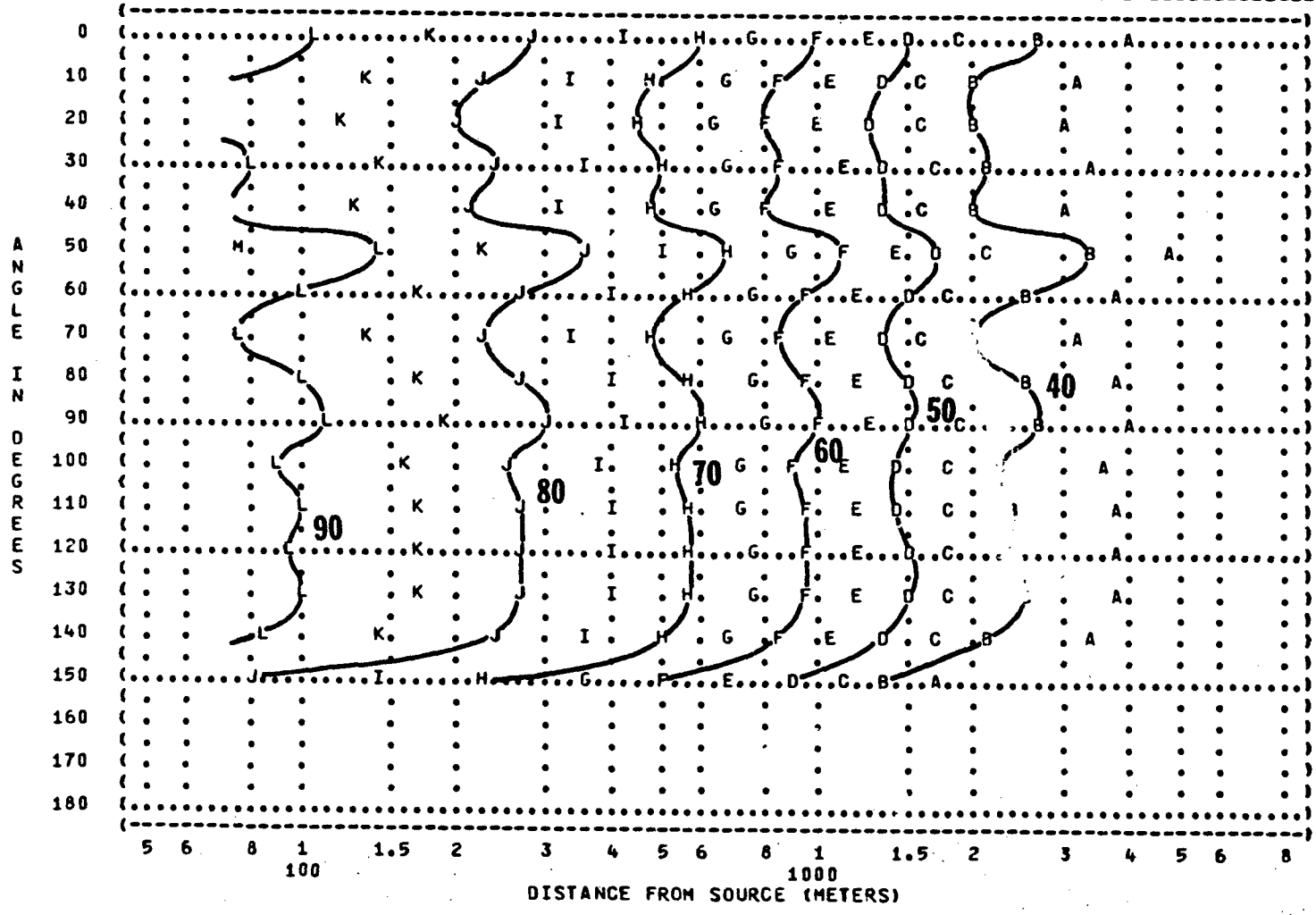
NOISE SOURCE/SUBJECT:

C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
RUNUP POWER
9600 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 03
17 APR 75
PAGE 21




| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |
| L | 90 |
| M | 95 |

FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 500 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
RUNUP POWER
9600 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 03
17 APR 75
PAGE 22

| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |
| L | 90 |
| M | 95 |

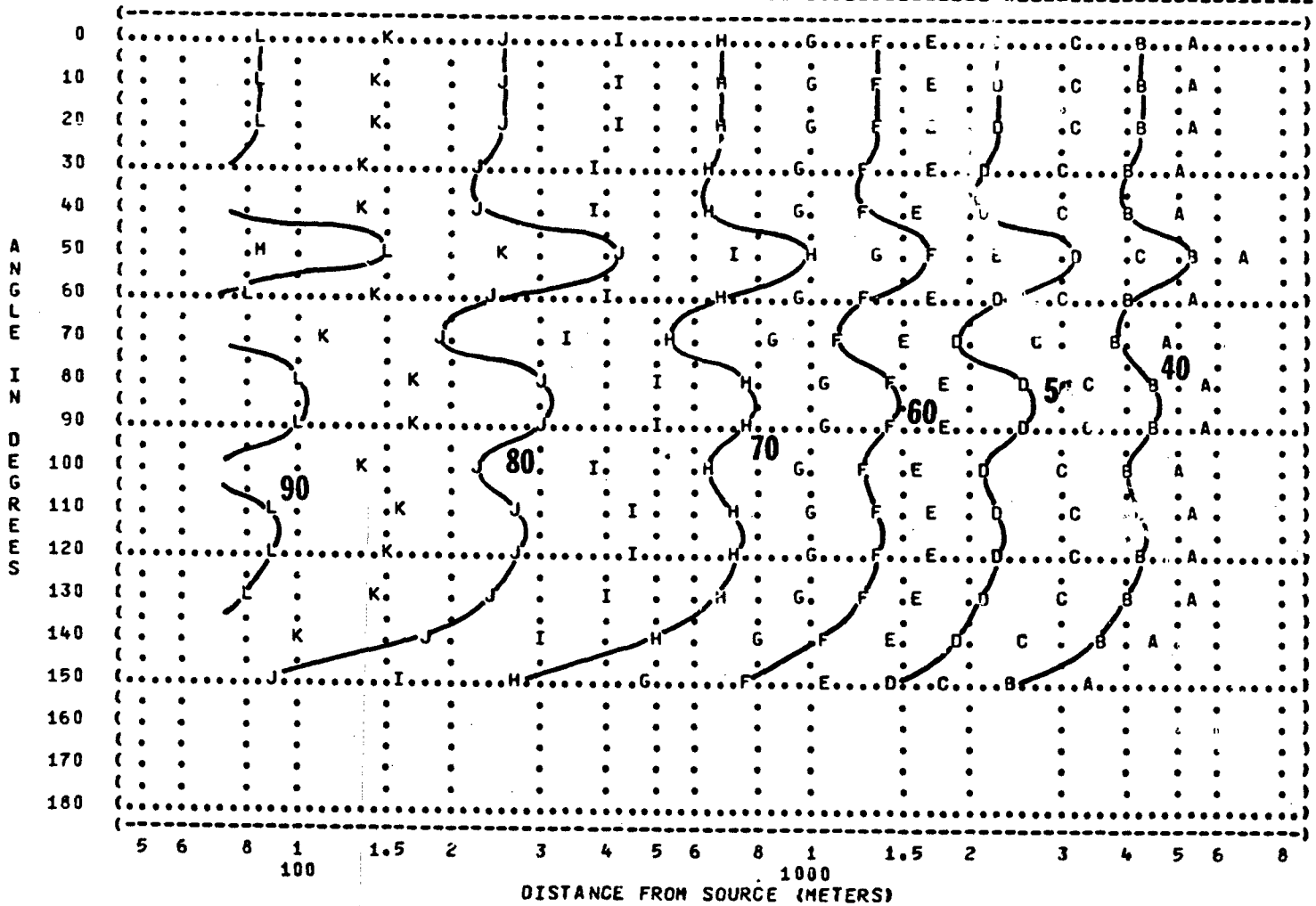


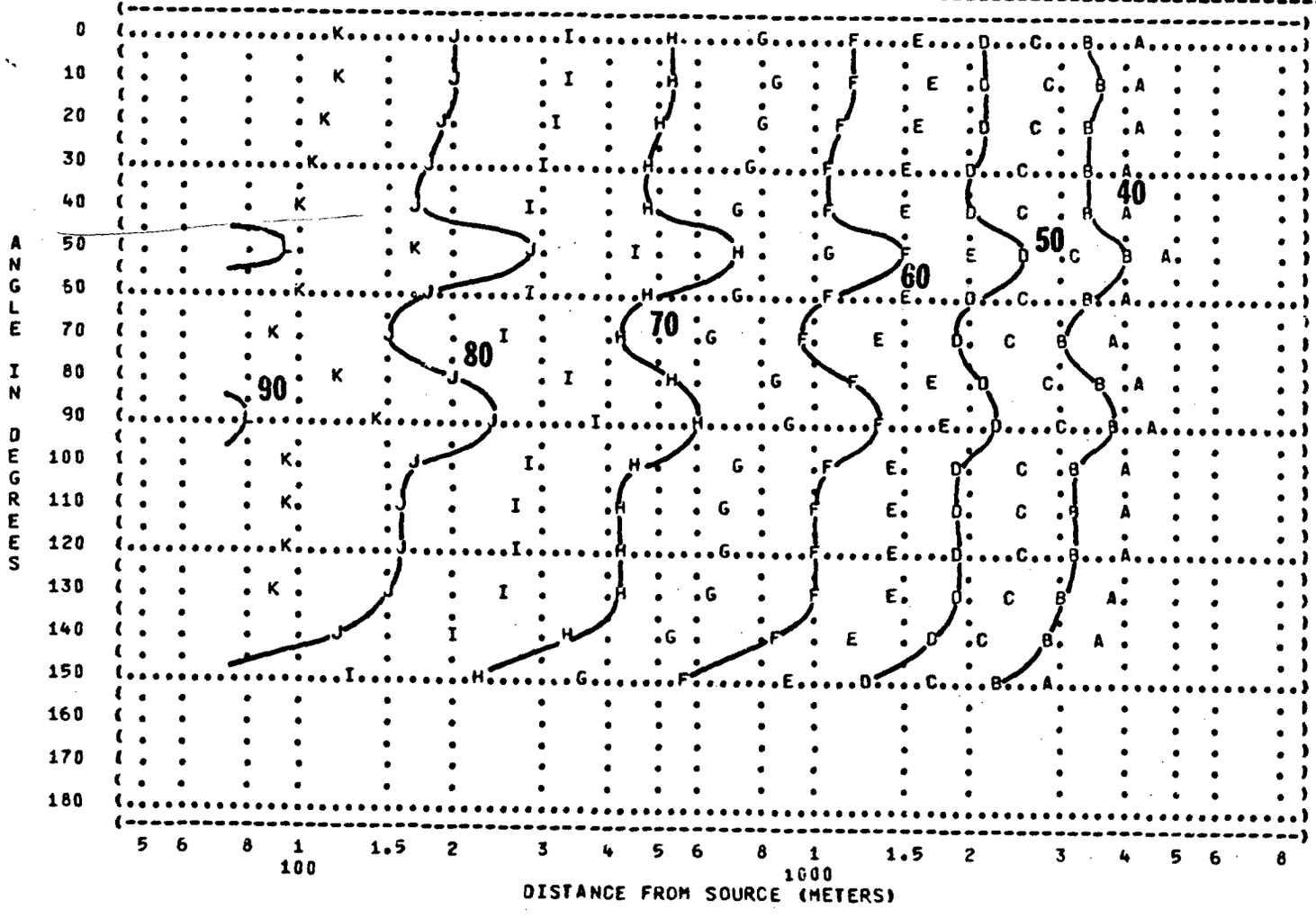
FIGURE: 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 1000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
RUNUP POWER
9600 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 03
17 APR 75
PAGE 23




| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |
| L | 90 |

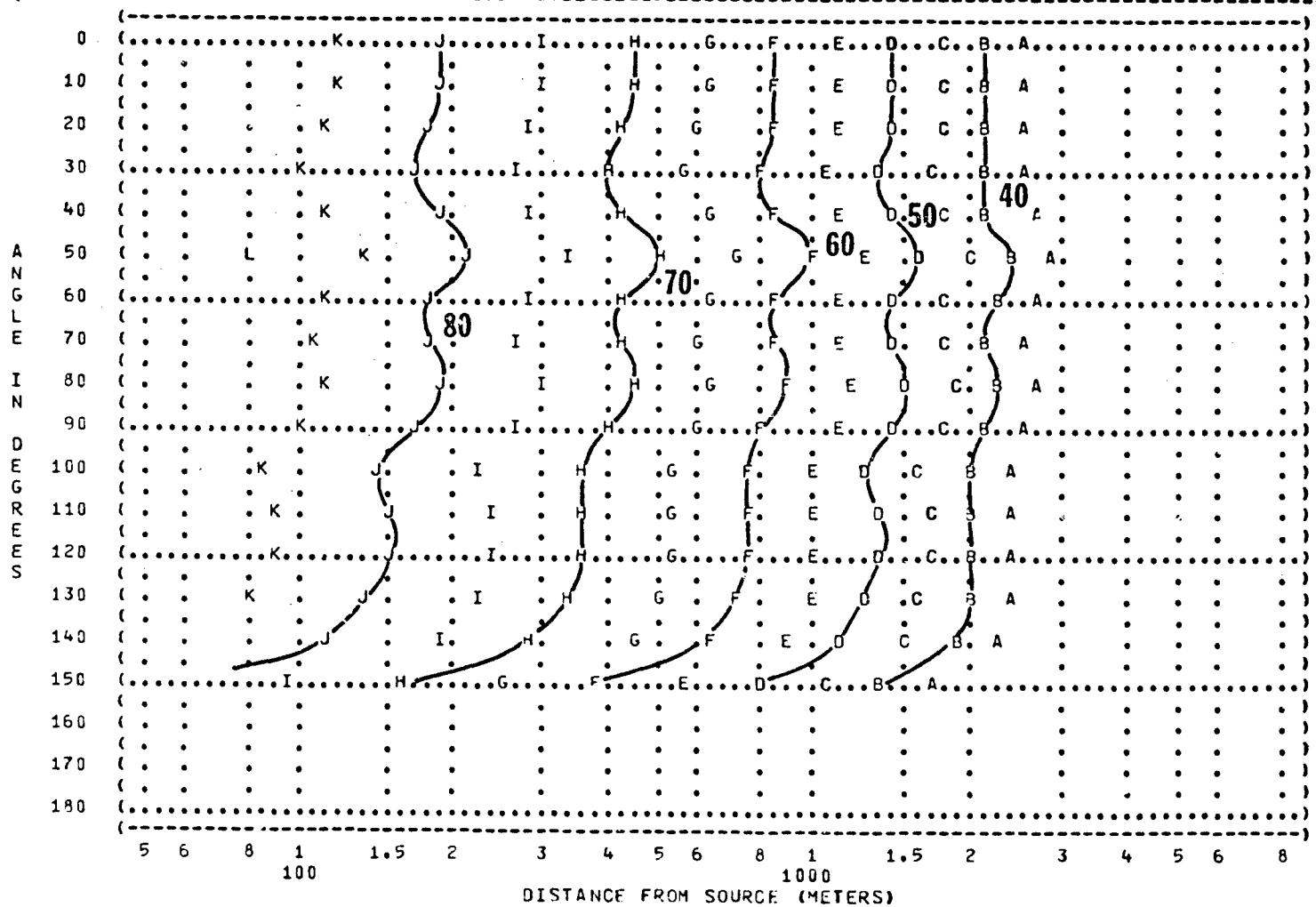
FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 2000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
RUNUP POWER
9600 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 03
17 APR 75
PAGE 24




| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |
| L | 90 |

FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 4000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
RUNUP POWER
9600 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 03
17 APR 75
PAGE 25

| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |

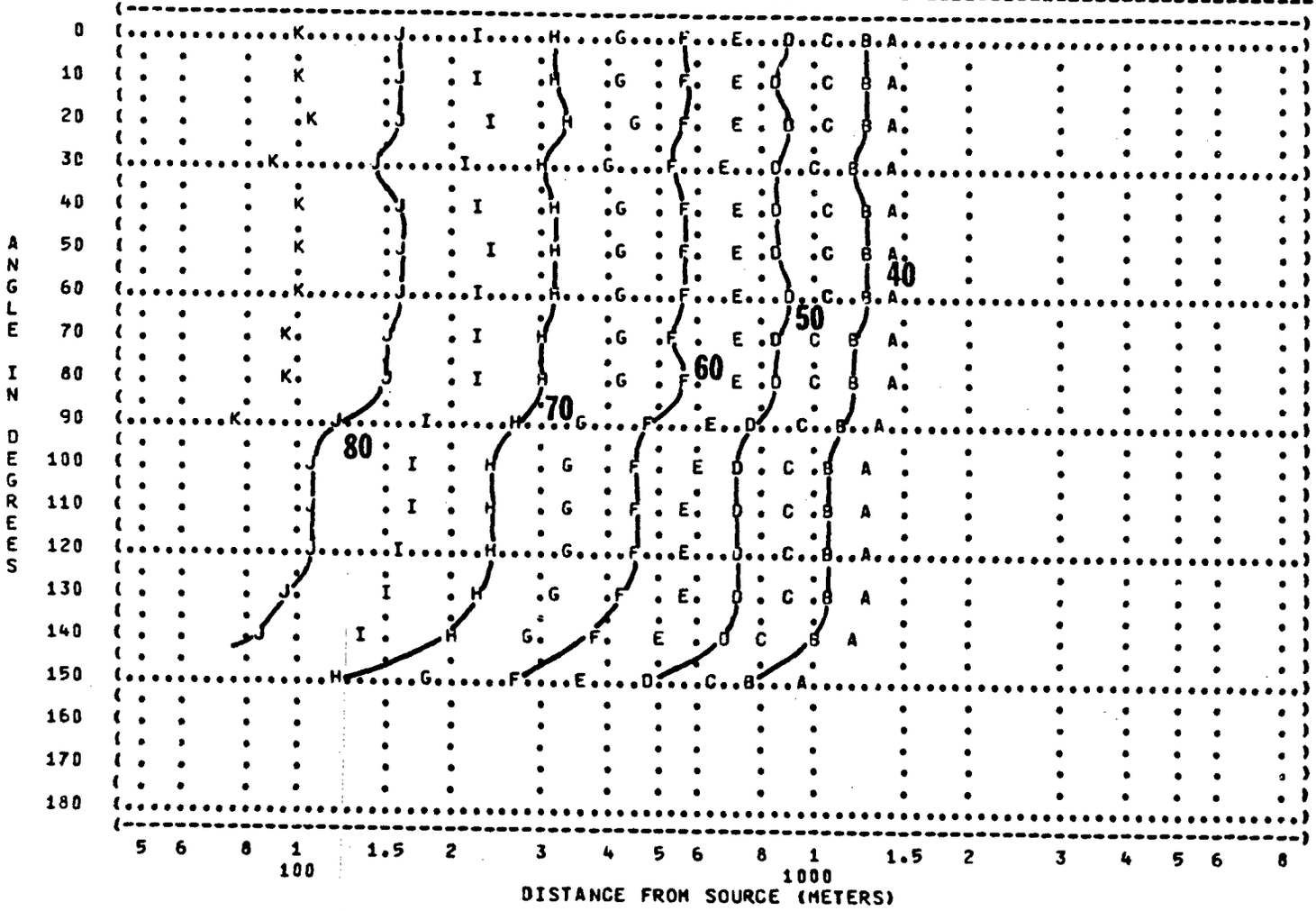


FIGURE: 11

SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
8000 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 03
17 APR 75
PAGE 26

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
RUNUP POWER
9600 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |

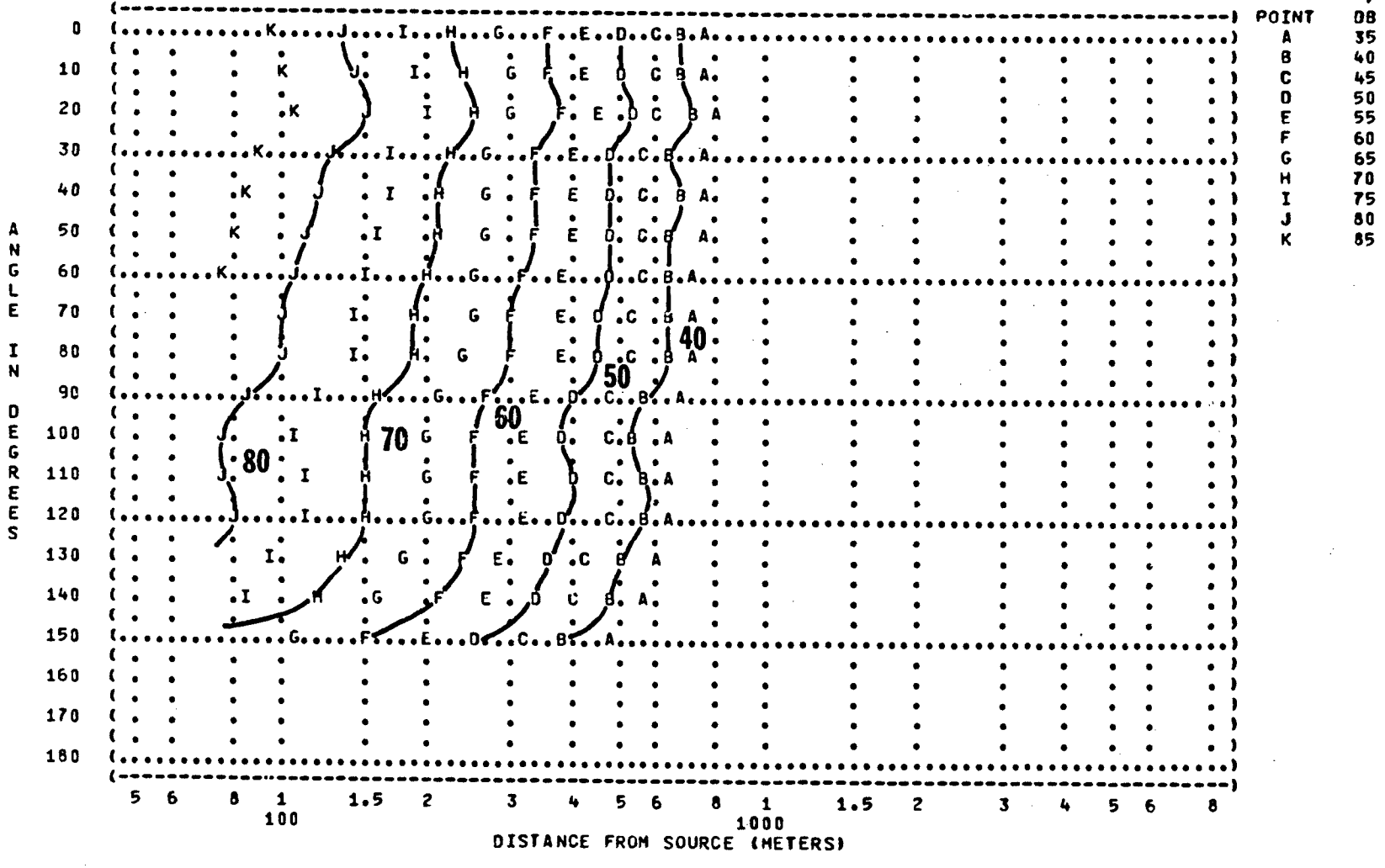


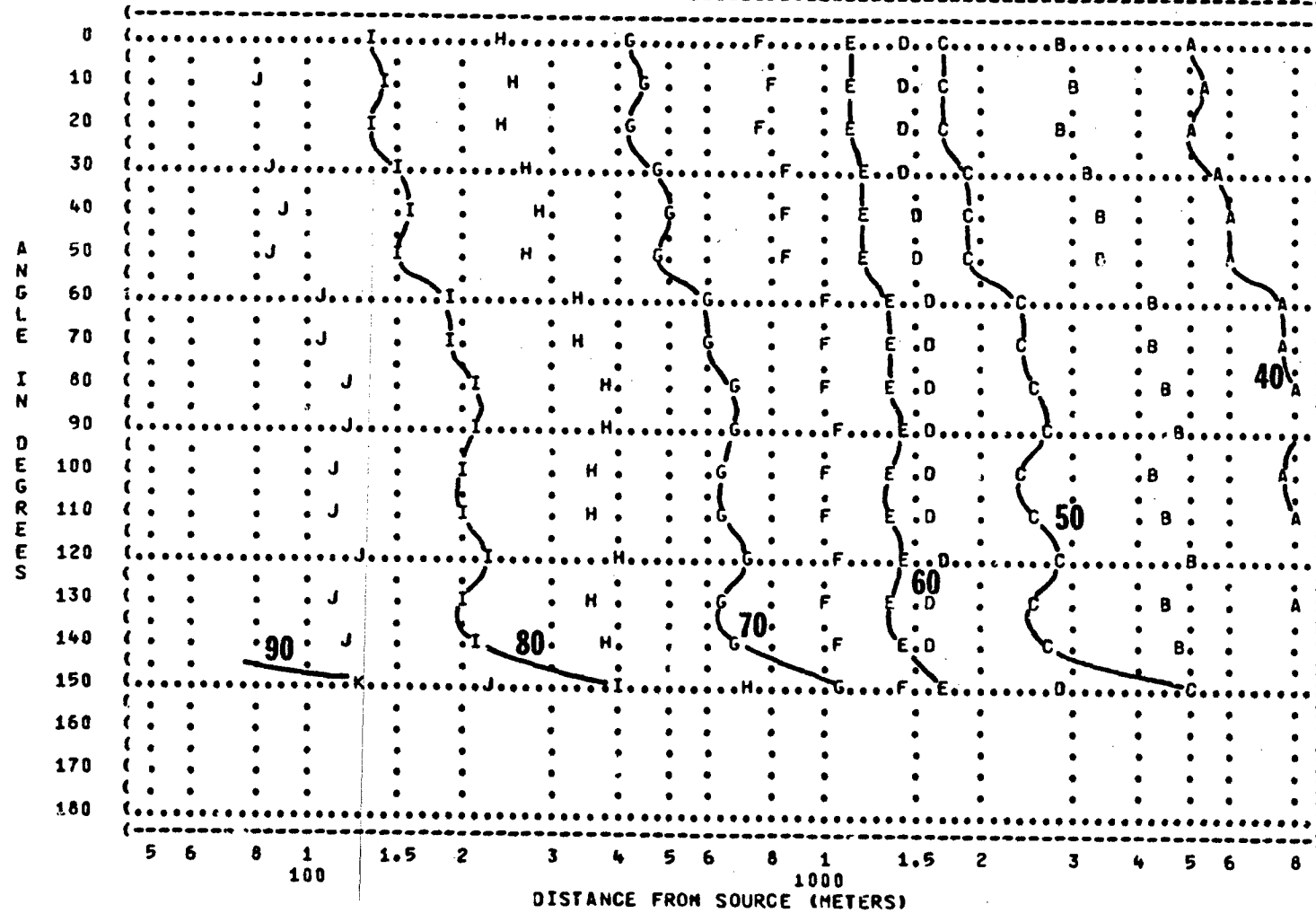
FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 31.5 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
16800 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 04
17 APR 75
PAGE 18




| POINT | DB |
|---|---|
| A | 40 |
| B | 45 |
| C | 50 |
| D | 55 |
| E | 60 |
| F | 65 |
| G | 70 |
| H | 75 |
| I | 80 |
| J | 85 |
| K | 90 |

FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 63 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
16800 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 04
17 APR 75
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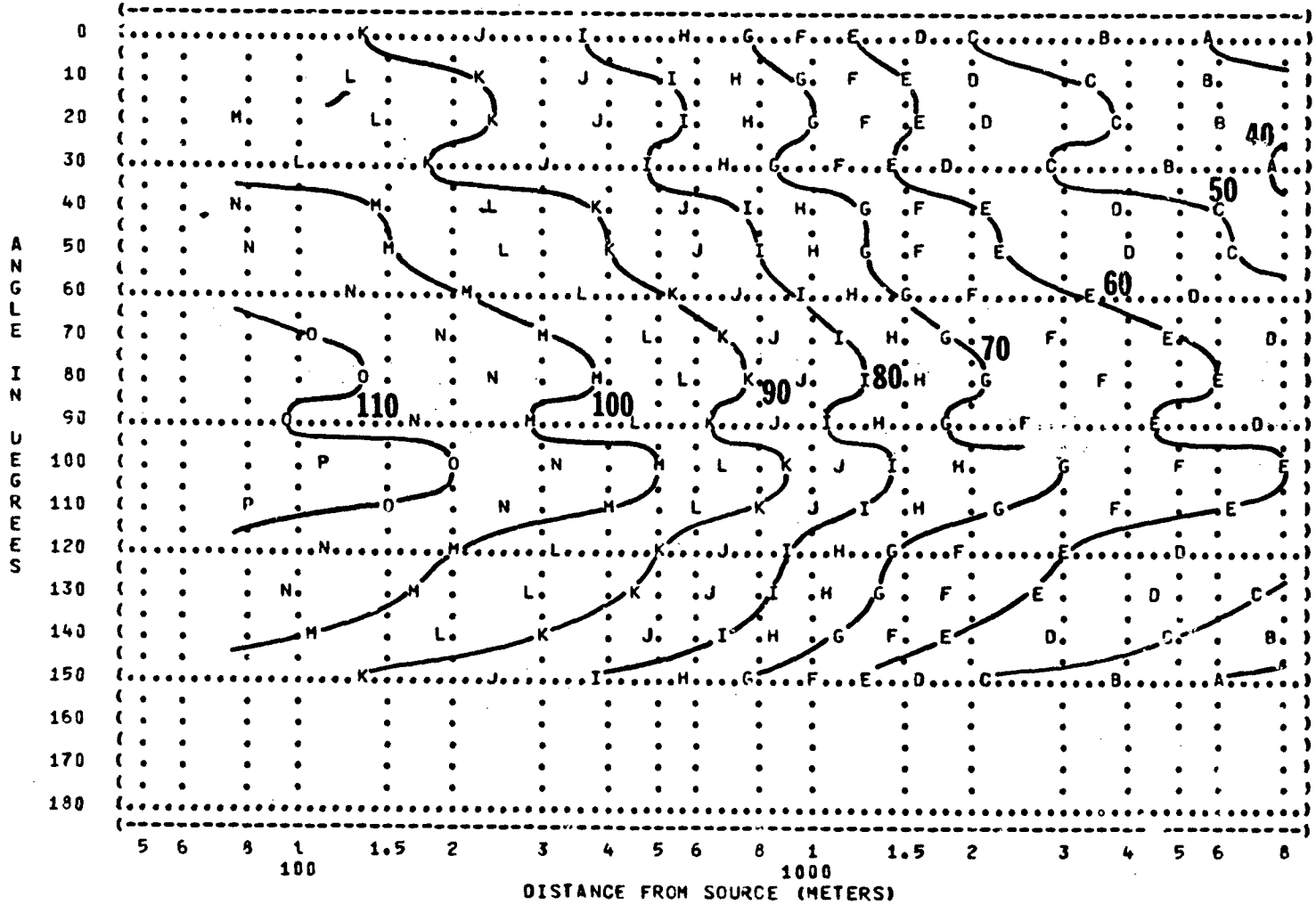


| POINT | DB |
|---|---|
| A | 40 |
| B | 45 |
| C | 50 |
| D | 55 |
| E | 60 |
| F | 65 |
| G | 70 |
| H | 75 |
| I | 80 |
| J | 85 |
| K | 90 |
| L | 95 |
| M | 100 |
| N | 105 |
| O | 110 |
| P | 115 |

FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 125 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
16800 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 04
17 APR 75
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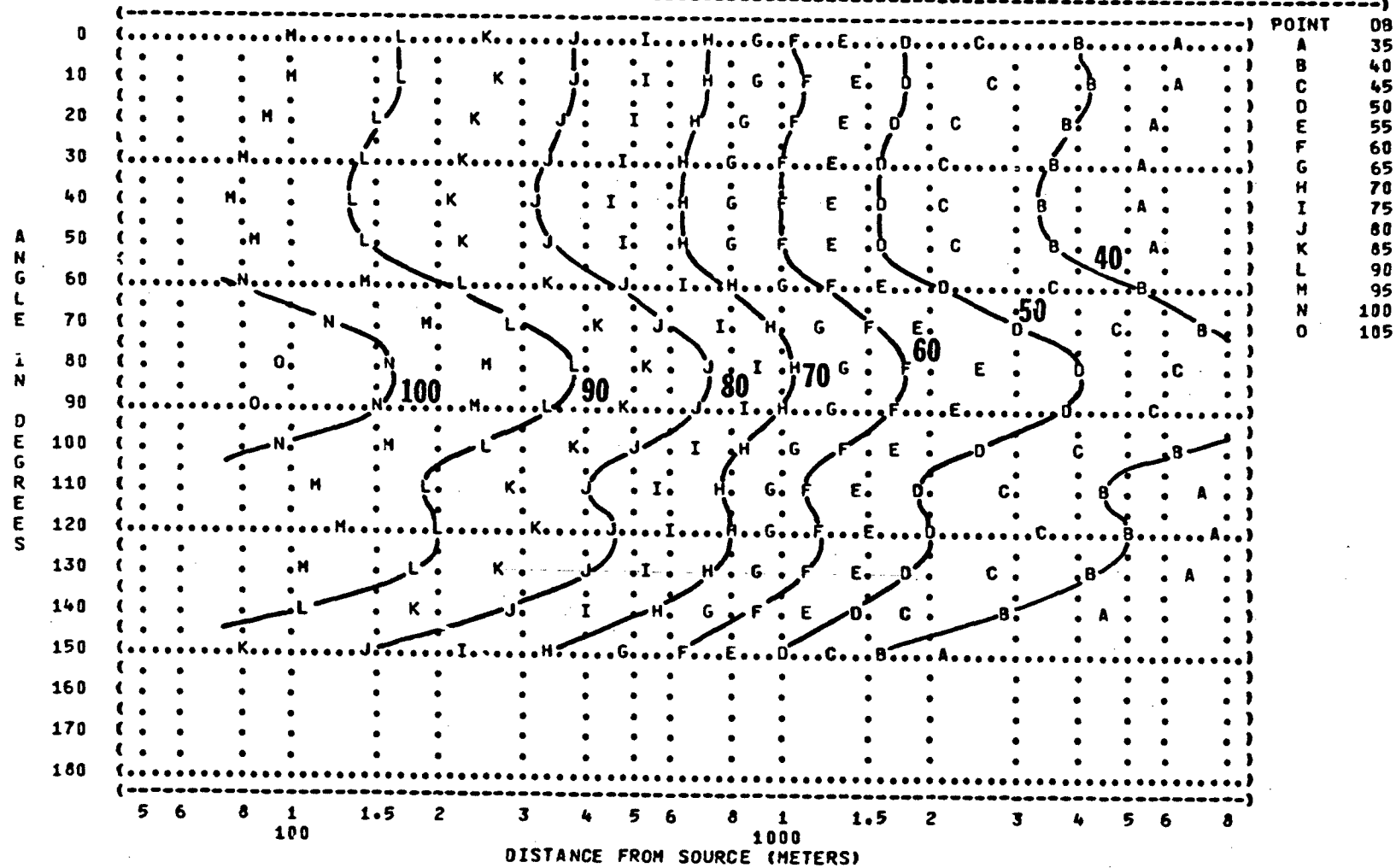


| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |
| L | 90 |
| M | 95 |
| N | 100 |
| O | 105 |

FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 250 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
16800 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 04
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| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |
| L | 90 |
| M | 95 |
| N | 100 |

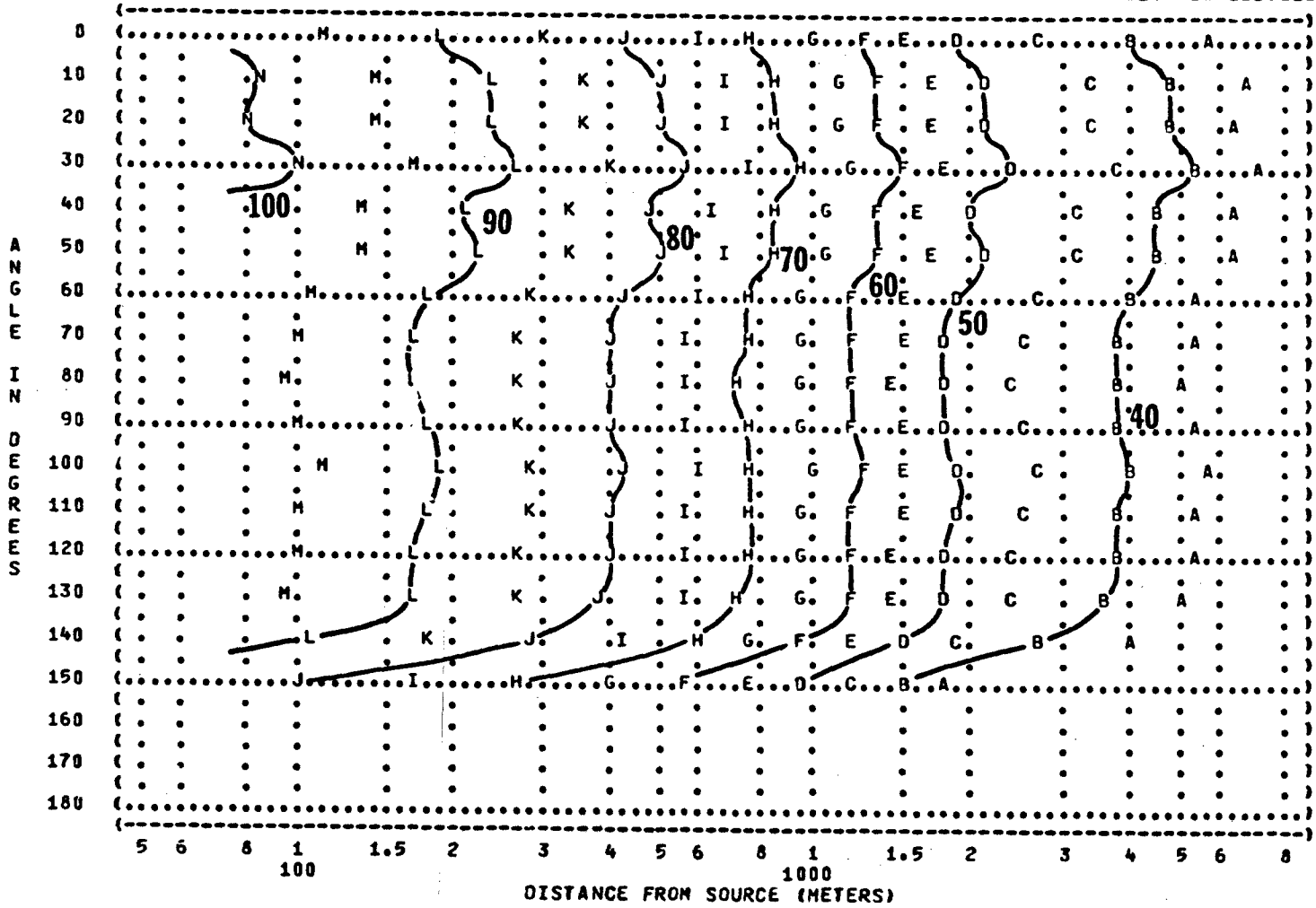

FIGURE 11 SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
500 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 04
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NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
16800 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |
| L | 90 |
| M | 95 |

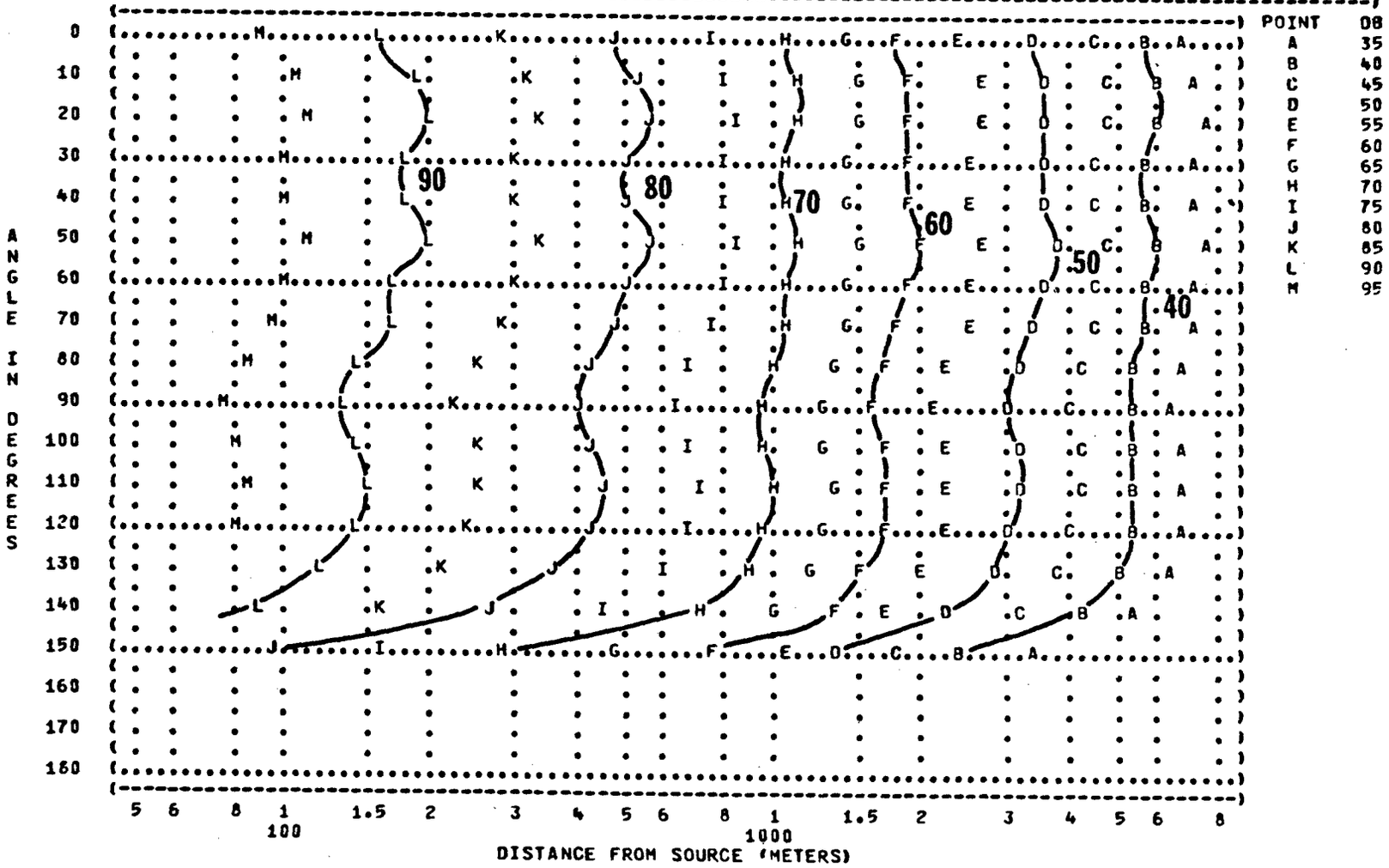


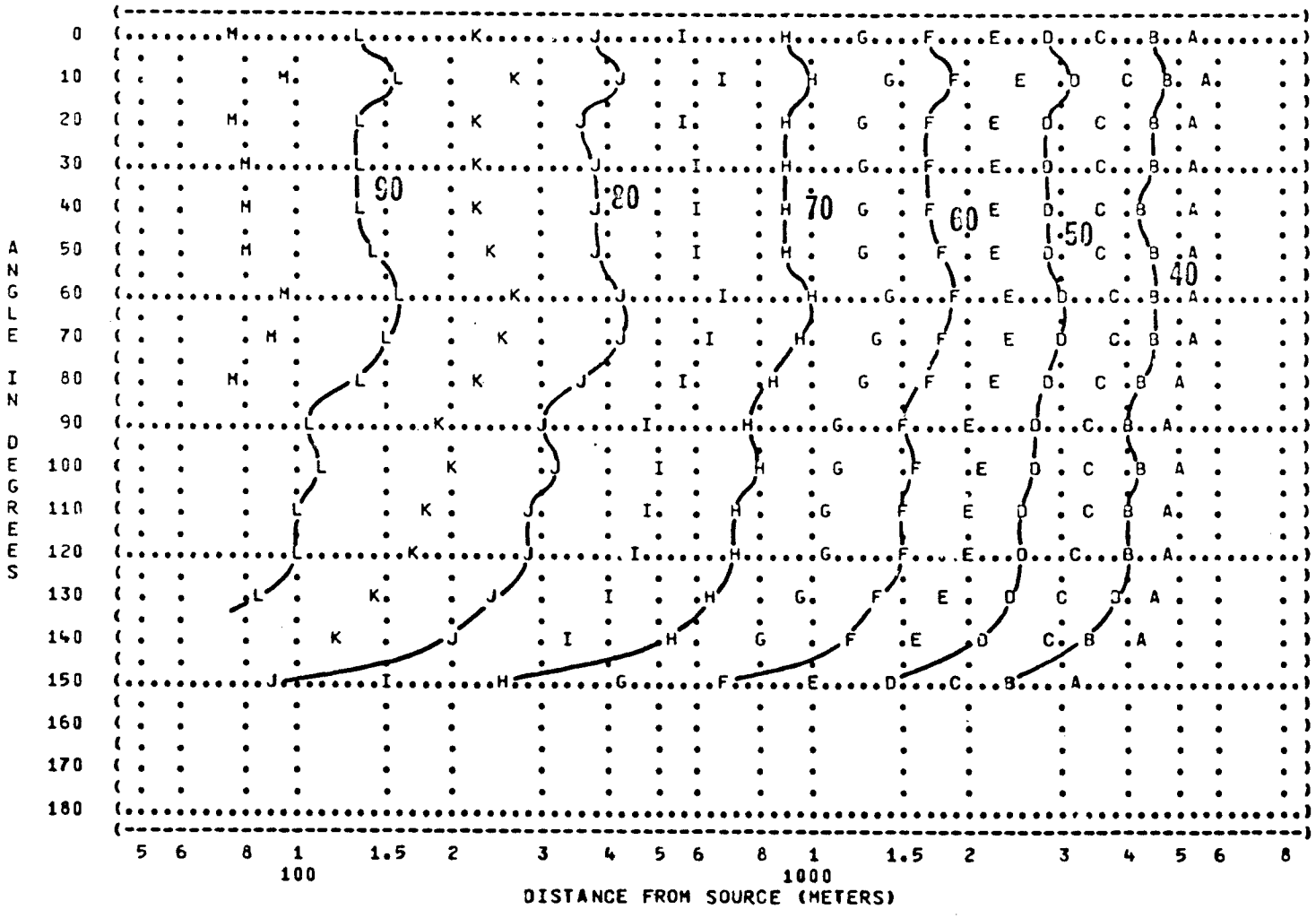
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 1000 HZ OCTAVE BAND

IDENTIFICATION: OMEGA 1.4 TEST 75-002-021 RUN 04 17 APR 75 PAGE 23

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
16800 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %




| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |
| L | 90 |
| M | 95 |

FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 2000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
16800 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 04
17 APR 75
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| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| F | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |
| L | 90 |
| M | 95 |

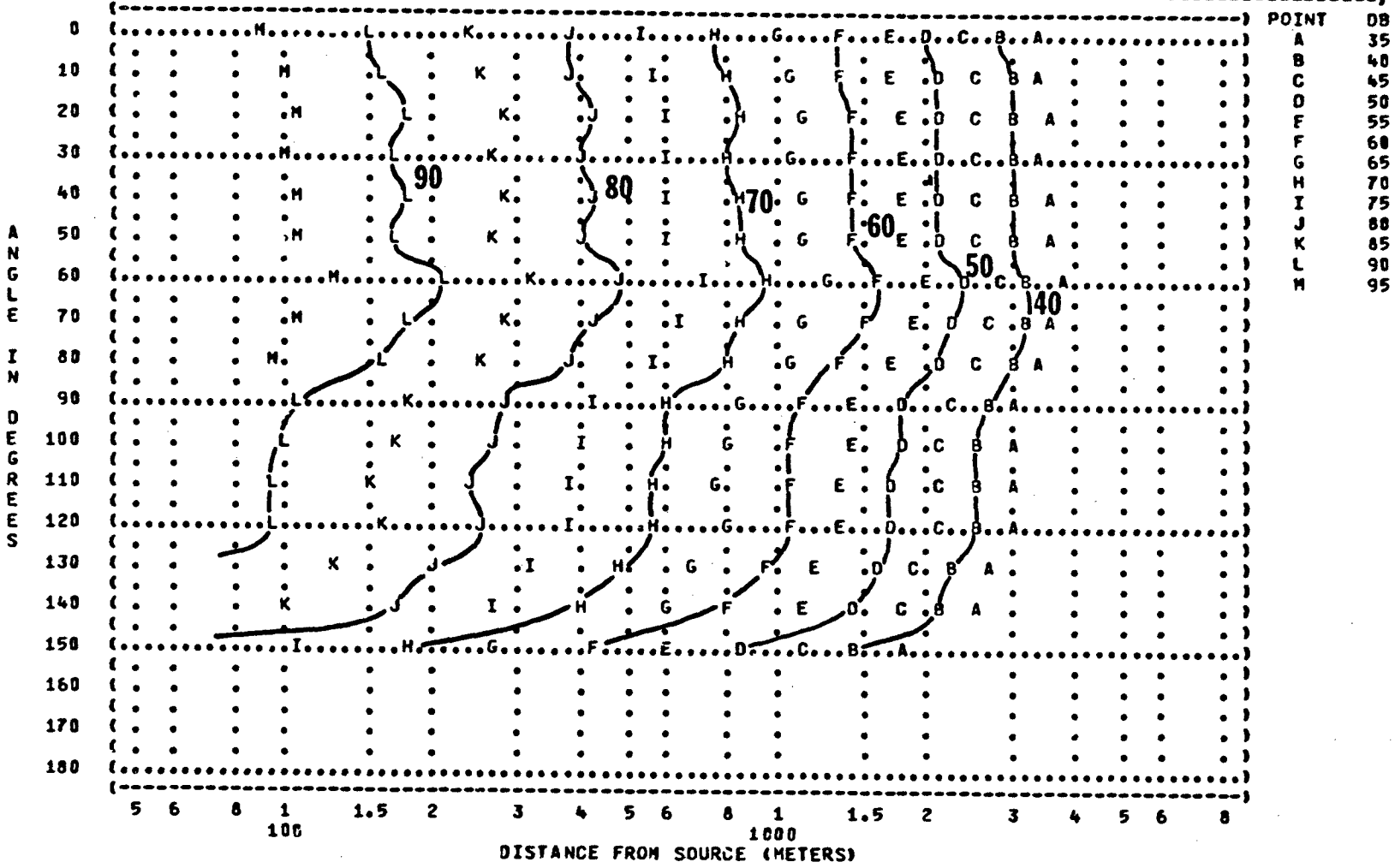

FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 4000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-/A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
16800 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-021
RUN 04
17 APR 75
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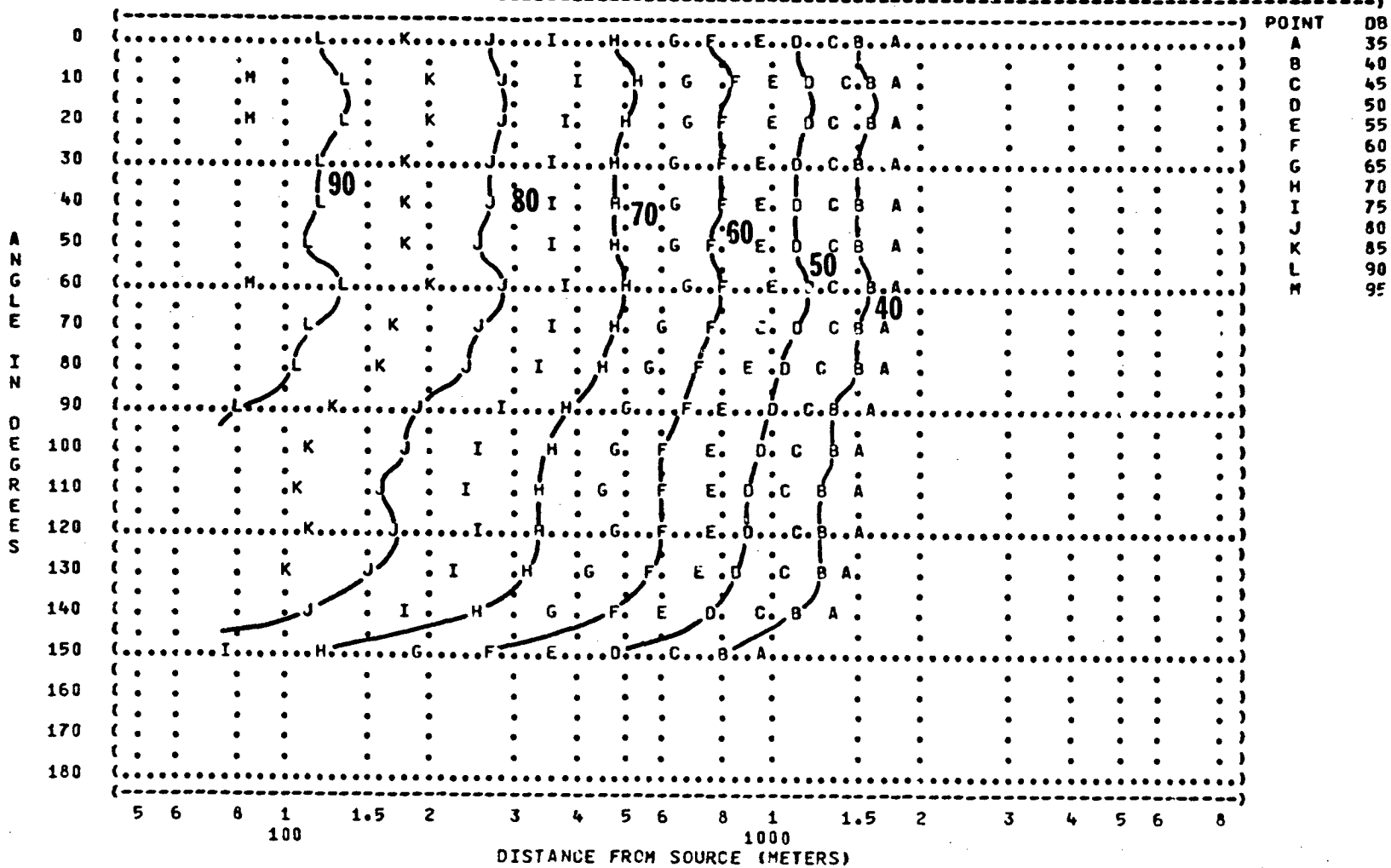


| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |
| L | 90 |
| M | 95 |

11 EQUAL LEVEL CONTOURS (DB)
8000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-130E AIRCRAFT
T56-A-7A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
16800 INCH POUNDS TORQUE
ALL ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

OMEGA 1.4
TEST 75-002-021
RUN 04
17 APR 75
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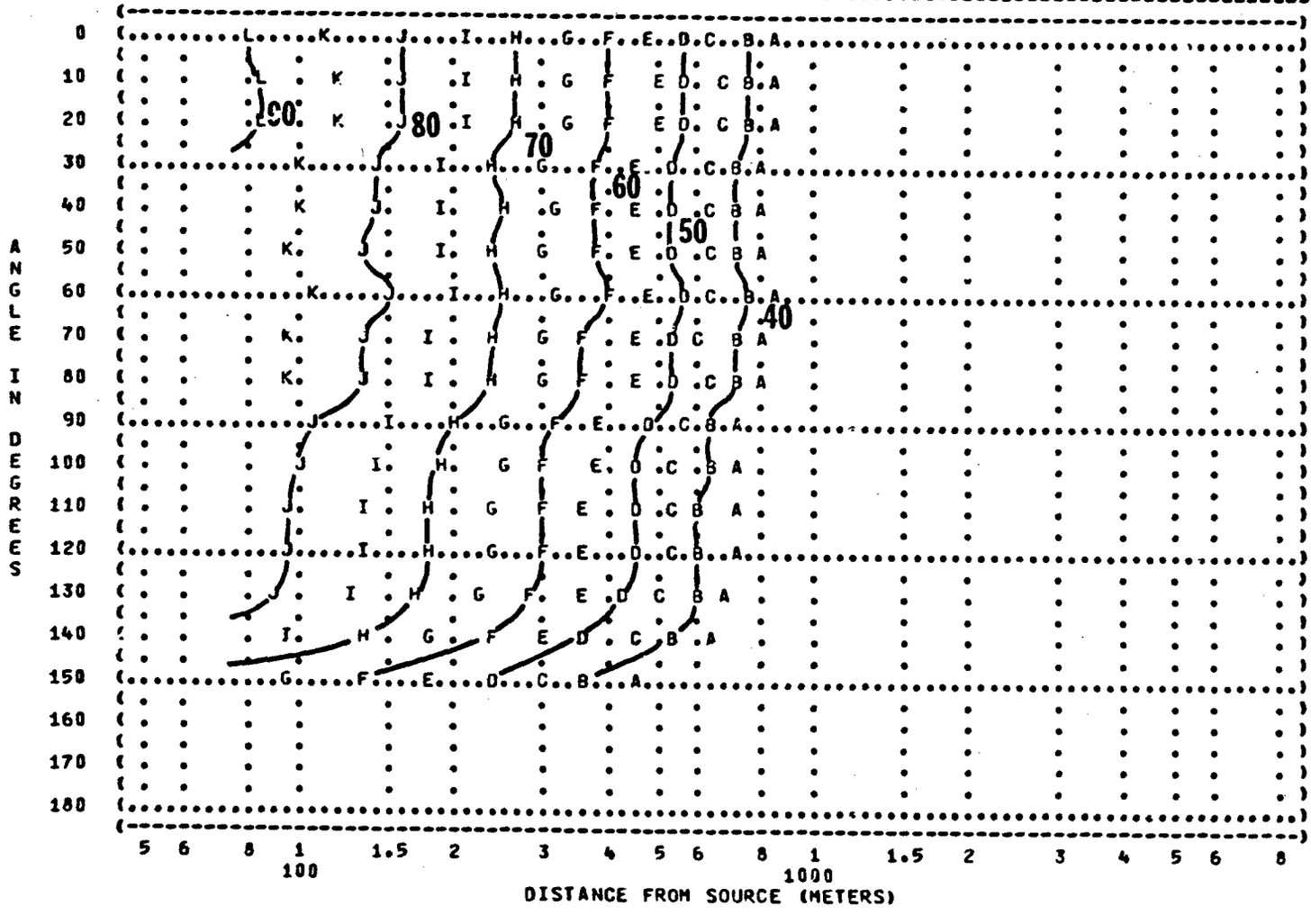


| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |
| L | 90 |



*U.S.Government Printing Office: 1977 — 757-080/244